

PRECINCT No. 1 AREA ROAD DISTRESS MAINTENANCE

HIDALGO COUNTY, TEXAS



90% REVIEW SUBMITTAL

CONSULTANT'S SHEET
PROJECT NO. 16100-17

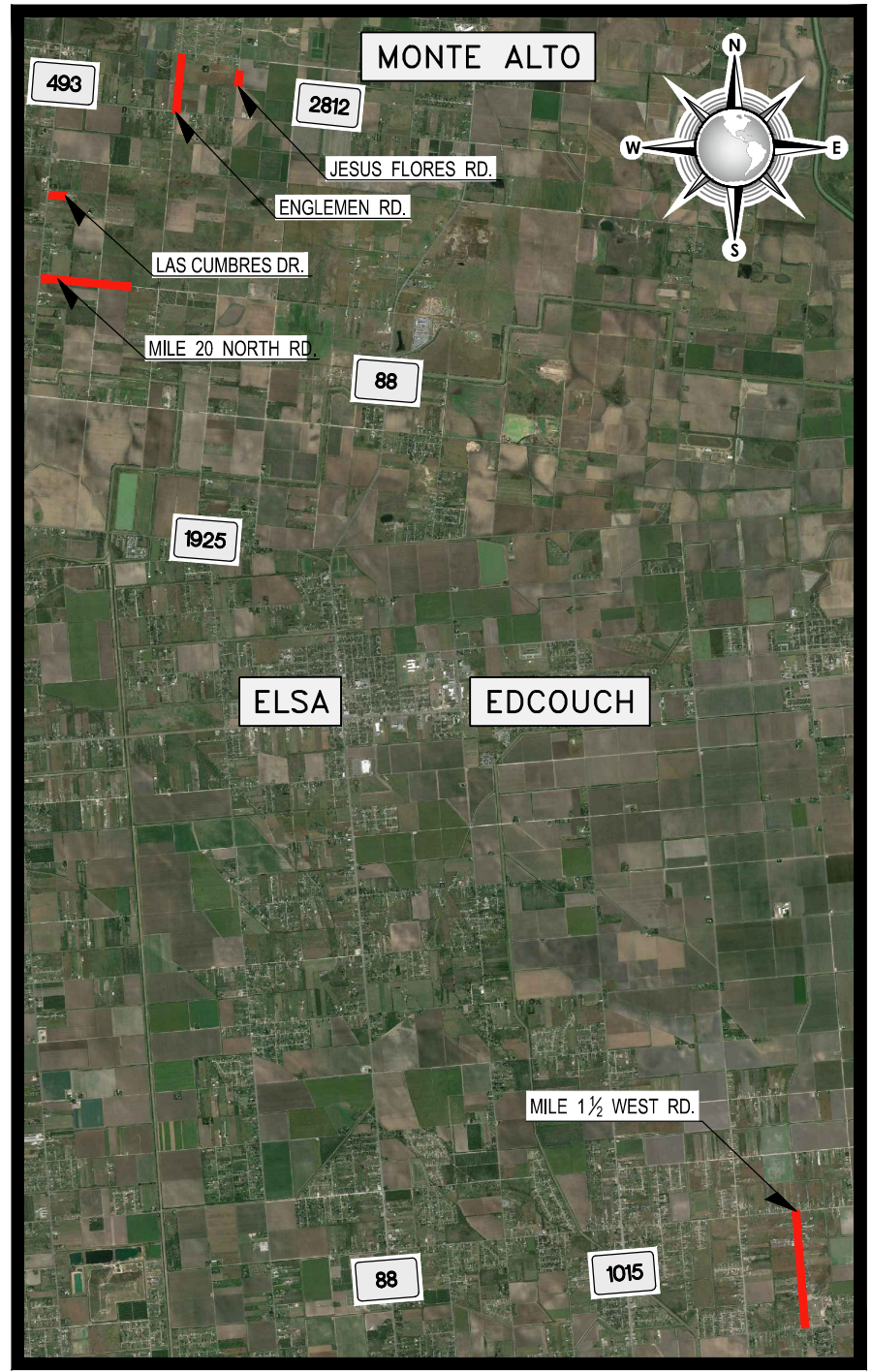
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RAMON GARCIA
HIDALGO COUNTY JUDGE

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COMMISSIONER PCT. No. 1 COMMISSIONER PCT. No. 3

EDUARDO "EDDIE" CANTU JOSEPH PALACIOS
COMMISSIONER PCT. No. 2 COMMISSIONER PCT. No. 4



LOCATION MAP
NOT TO SCALE

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APPROVED: _____ DATE: _____

RAMON GARCIA
HIDALGO COUNTY JUDGE

RECOMMENDED
FOR LETTING: _____ 2016



PREPARED BY:

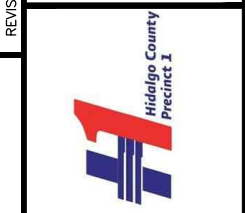
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REVISION NO. DATE BY

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DESCRIPTION

HIDALGO COUNTY
PRECINCT No. 1 AREA
ROAD DISTRESS MAINTENANCE

TITLE SHEET / VICINITY MAP

DRAWING NO.
T1

SHEET 1 of 33

FILE NAME: Z:\2016\Engineering\Hidalgo County\Precinct No.1\Mile 1.5, J. Flores, Engleman, Las Cumbres & Mile 20 N\Drawings\Civil\01_T1_COVER SHEET.dwg LAYOUT NAME: Model1 PLOTTED: Monday, November 07, 2016 - 2:35pm USER: Administrator

1. GENERAL NOTES

- ALL CONSTRUCTION TO BE COORDINATED WITH HIDALGO COUNTY & TXDOT.
- PRIOR TO THE COMMENCEMENT OF ANY WORK AT PROJECT SITE, CONTRACTOR SHALL VERIFY WITH HIDALGO COUNTY AGENTS THAT PROPOSED CONSTRUCTION METHODS WILL NOT INTERFERE OR IMPEDE ANY DAILY ACTIVITY OF HIDALGO COUNTY LOCATED IN THIS SITE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR TRAINING HIS EMPLOYEES AND SUBCONTRACTORS IN THE RECOGNITION AND AVOIDANCE OF UNSAFE CONDITIONS, AND IN THE REGULATIONS AND HAZARDS WHICH APPLY TO THE AREA IN WHICH THE WORK WILL TAKE PLACE.
- ALL SAFETY EXPOSURES OR VIOLATIONS SHALL BE RECTIFIED IMMEDIATELY BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING PROTECTION OF PERSONS AND PROPERTY, AND FOR PROVIDING SAFE WORKING CONDITIONS THROUGHOUT THE WORK PROGRESS. ALL AREAS ADJACENT TO THE CONSTRUCTION AREA OR AFFECTED BY THE CONSTRUCTION MUST BE PROTECTED FROM DAMAGE, CLEANED, AND RESTORED TO THE ORIGINAL CONDITION AT NO ADDITIONAL EXPENSE TO THE OWNER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING ALL CLEARANCES AND PERMITS AS NECESSARY, PRIOR TO THE COMMENCEMENT OF THE WORK.
- WORK AREAS SHALL BE KEPT, AT ALL TIMES, FREE OF DEBRIS AND NON - HAZARDOUS MATERIAL TO THE SATISFACTION OF THE HIDALGO COUNTY. THE CONTRACTOR SHALL COORDINATE STORAGE OF MATERIALS, PARKING OF VEHICLES, AND RESTRICTIONS OF WORK WITH THE HIDALGO COUNTY AFTER PROJECT COMPLETION, THE SITE SHALL BE CLEANED UP TO ITS CONDITION PRIOR TO THE START OF THE PROJECT TO THE SATISFACTION OF THE HIDALGO COUNTY.
- THE SEQUENCE OF CONSTRUCTION SHALL BE SCHEDULED AND COORDINATED WITH THE HIDALGO COUNTY.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF EXISTING CONDITIONS, AND SHALL PERFORM FIELD MEASUREMENTS PRIOR TO FABRICATION AND/OR PURCHASE OF ANY MATERIAL AND SHALL CONTACT THE ENGINEER SHOULD EXISTING CONDITIONS BE DIFFERENT FROM THE DESIGN DRAWINGS FOR THIS PROJECT. CONFLICTS ARISING DUE TO LACK OF COORDINATION SHALL BE THE RESPONSIBILITY AND AT THE EXPENSE OF THE CONTRACTOR.
- THE CONTRACTOR SHALL NOT FABRICATE OR INSTALL MEMBERS AS SHOWN ON THE DRAWINGS IF THERE ARE DISCREPANCIES OR CONFLICTS BETWEEN THE EXISTING CONDITIONS AND THE INFORMATION SHOWN ON THE DRAWINGS, UNTIL SUCH DISCREPANCIES HAVE BEEN RESOLVED. PRIOR TO FABRICATION OF INSTALLATION, THE CONTRACTOR SHALL IMMEDIATELY CALL SUCH DISCREPANCIES OR CONFLICTS TO THE ATTENTION OF THE ENGINEER.
- ANY REQUIRED CHANGES TO THE DRAWINGS RESULTING FROM THE ACCEPTANCE OF ALTERNATES AND/OR SUBSTITUTIONS ARE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE SUBMITTED TO THE OWNER AND THE ENGINEER FOR APPROVAL.
- ALL CONTRACT WORK IN THESE DRAWINGS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE LATEST EDITIONS OF THE FOLLOWING NATIONAL CODES AND STANDARDS:
 - INTERNATIONAL BUILDING CODE, 2012 (IBC2012)
 - AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE) 7-05
 - OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)
 - NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
 - NATIONAL FIRE CODE (NFC)
 - TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (2006)
- THE CONTRACTOR SHALL DISPOSE OF ALL MATERIALS REMOVED WHICH ARE NOT TO BE REINSTALLED OR SALVAGED ON THE PROJECT. DISPOSAL OF MATERIALS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- EXCAVATIONS SHALL NOT BE MADE DURING INCLEMENT WEATHER. WATER ACCUMULATION IN EXCAVATIONS EXCEEDING 1 INCH SHALL BE PUMPED OUT BEFORE THE CONCRETE IS PLACED.
- THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE DESIGN AND IMPLEMENTATION OF TRENCH SAFETY PROGRAM. THE CONTRACTOR SHALL APPOINT A TRENCH SAFETY FOREMAN WHO WILL BE ON SITE AT ALL TIMES WHILE TRENCHING OR EXCAVATION IS BEING PERFORMED. ALL EXCAVATIONS AND BACKFILL OPERATIONS SHALL BE IN ACCORDANCE WITH THE LATEST OSHA EXCAVATIONS SAFETY STANDARDS, OSHA 2226 AND 29 CFR PART 1926 SUBPART P. THE CONTRACTOR SHALL PROVIDE AN EXCAVATION PLAN PREPARED BY AN ENGINEER REGISTERED IN THE STATE OF TEXAS. THE EXCAVATION PLAN SHALL INDICATE THE PROCEDURES TO BE USED BY THE CONTRACTOR TO COMPLY WITH THE OSHA REQUIREMENTS. THE EXCAVATION PLAN SHALL IDENTIFY THE "COMPETENT PERSON" AS REQUIRED BY PARAGRAPH 1926.651 (K) (1) THAT WILL WORK WITH EACH CREW.
- PERMITTING ASSOCIATED WITH THE PROJECT INCLUDES BUT ARE NOT LIMITED TO THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) CONSTRUCTION SITE STORM WATER PERMIT NOTICE OF INTENT (NOI) FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES UNDER THE TPOES CONSTRUCTION GENERAL PERMIT (TXR 150000). THIS PERMIT IS REQUIRED FOR CONSTRUCTION ACTIVITIES INCLUDING CLEARING, GRADING, AND EXCAVATION ACTIVITIES THAT DISTURB GREATER THAN THE TOTAL LAND AREA WITHIN THE PROJECT LIMITS.
- CONTRACTOR SHALL MARK ALL AS-BUILT CONDITIONS FOR UTILITIES AND STORM SEWER ON THE PLAN AND SUBMIT TO THE ENGINEER AT END OF PROJECT.
- THE CONTRACTOR SHALL VISIT THE PROJECT SITE IN ORDER TO BECOME FAMILIAR WITH THE SITE CONDITIONS PRIOR TO COMMENCING ANY WORK. THE CONTRACTOR IS TO RESEARCH THE EXISTING CONDITIONS AND PROPOSED WORK TO BECOME FULLY AWARE OF THE INTENT OF THE WORK. THE CONTRACTOR WILL BE REQUIRED TO ACQUIRE ALL NECESSARY PERMITS AND PAY ASSOCIATED FEES.
- THE DRAWING SHOWS AS MUCH INFORMATION AS CAN BE REASONABLY OBTAINED BY THE SURVEY CREWS AND FROM EXISTING RECORDS REGARDING THE LOCATION AND NATURE OF PIPELINES, STORM SEWER, WATERLINES, SANITARY SEWER, TELEPHONE CONDUITS, ETC. HOWEVER THE ACCURACY AND COMPLETENESS OF SUCH INFORMATION IS NOT GUARANTEED. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO LOCATE SUCH UNDERGROUND FEATURES SUFFICIENTLY IN ADVANCE OF OPERATIONS TO PRECLUDE DAMAGE TO SAME.
- UNDERGROUND UTILITY LINES SHOWN ON THE PLANS CONSTITUTE AN ATTEMPT BY THE ENGINEER TO LOCATE THESE LINES FOR THE CONVENIENCE OF THE CONTRACTOR. THE CONTRACTOR SHALL FIELD LOCATE ALL UNDERGROUND UTILITY LINES AND MAKE PROVISIONS FOR THEIR PROTECTION. IN THE EVENT OF DAMAGE TO UNDERGROUND UTILITIES, WHETHER SHOWN OR NOT ON THE DRAWINGS, THE CONTRACTOR SHALL MAKE THE NECESSARY REPAIRS TO PLACE THE FACILITIES BACK IN SERVICE. ALL SUCH REPAIRS SHALL CONFORM TO THE REQUIREMENTS OF THE COMPANY OR AGENCY OPERATING THE FACILITY. DAMAGE BY THE CONTRACTOR TO EXISTING UTILITIES SHALL BE REPORTED IMMEDIATELY TO THE OWNER OF THE UTILITY AND THE ENGINEER. THE COST OF DAMAGE AND/OR REPAIR TO SAID UTILITY SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. NO PAYMENT WILL BE MADE FOR DELAYS DUE TO UTILITY CONFLICTS.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAKE CHANGES IN DRAINAGE, WATERLINE, AND SANITARY SEWER GRADES TO PERMIT THE LINES TO PASS ALL UNDERGROUND LINES, AS AUTHORIZED BY THE ENGINEER, AND IN ACCORDANCE WITH TCEQ'S 'TEXAS ADMINISTRATIVE CODE' CHAPTER 317, APPENDIX E, 'SEPARATION DISTANCES'.
- DURING THE COURSE OF CONSTRUCTION, THE CONTRACTOR MAY ENCOUNTER EXISTING PIPES WHICH ARE NO LONGER IN SERVICE. THE CONTRACTOR MUST EXPLORE AND RESEARCH THE SITUATION AND PROVIDE EVIDENCE TO THE OWNERS REPRESENTATIVE THAT THE EXISTING PIPE IS ABANDONED. ONCE IT IS AGREED THAT THE LINE IS ABANDONED, THEN THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SAID PIPE. THIS GENERALLY APPLIES TO ALL WHEN REMOVING DRAINAGE CULVERTS. ACTIVE DRAINAGE CULVERTS MUST BE REINSTALLED IF THEY ARE REMOVED FOR THE PURPOSE OF CONSTRUCTION. ANY ABANDONED LINES TO REMAIN IN PLACE SHALL BE FULLY GROUTED.
- TRENCH EXCAVATION SHALL NOT PRECEDE BACKFILL BY MORE THAN 200 FEET. NO TRENCH SHALL BE LEFT OPEN AFTER NORMAL WORKING HOURS.
- PRIOR TO THE COMMENCEMENT OF ANY WORK AT PROJECT SITE, CONTRACTOR SHALL VERIFY WITH THE HIDALGO COUNTY THAT PROPOSED CONSTRUCTION METHODS WILL NOT INTERFERE OR IMPEDE DAILY ACTIVITY OF ANY FOR THE HIDALGO COUNTY LOCATED IN THIS SITE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR DEMOLITION OF EXISTING IMPROVEMENTS ON SITE, INCLUDING ABOVE GROUND AND UNDERGROUND. CONTRACTOR SHALL REMOVE BELOW - GRADE STRUCTURES TO THREE FEET BELOW NATURAL GRADE OR TO SUCH DEPTH AS MAY BE REQUIRED TO MAINTAIN SUBSURFACE STABILITY OF THE SOIL.
- CONTRACTOR SHALL BACKFILL ALL VOIDS LEFT BY DEMOLITION AND COMPACT IN A MANNER SUITABLE TO FINAL IMPROVEMENTS.
- ALL DEMOLISHED MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE PROMPTLY REMOVED FROM THE SITE UNLESS NOTED OTHERWISE ON THE DRAWINGS.
- ANY DAMAGE TO EXISTING DRAINAGE, PRIVATE UTILITY, OR OTHER STRUCTURES SHALL BE REPAIRED TO PRE-CONSTRUCTION CONDITION AT CONTRACTOR'S EXPENSE.
- THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THE SAFETY OF THE PEDESTRIANS AND ALL VEHICULAR TRAFFIC FROM CONSTRUCTION RELATED ACTIVITIES DURING THE COURSE OF THIS PROJECT.
- THE CONTRACTOR SHALL COMPLY WITH ALL GOVERNMENTAL ONE-CALL REQUIREMENTS AND OTHER REGULATIONS WITH REGARD TO EXISTING UNDERGROUND UTILITIES, PIPELINES, AND OTHER FACILITIES A MINIMUM OF 48 HOURS IN ADVANCE OF CONSTRUCTION.
- ALL OPEN EXCAVATIONS SHALL BE ENCLOSED WITH ORANGE SAFETY FENCE AT ALL TIMES.

- EXCESS EXCAVATED MATERIAL, MUCK, VEGETATION, BROKEN CONCRETE, RC PIPE, AND OTHER UNWANTED MATERIAL BECOMES THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR. THE COST OF ALL HAULING IS CONSIDERED SUBSIDIARY; THEREFORE, NO DIRECT PAYMENT WILL BE MADE TO THE CONTRACTOR.
- THE QUANTITIES OF THE WORK AND MATERIALS SHOWN ON THE PLANS APPROXIMATELY REPRESENT THE WORK TO BE PERFORMED AND MATERIALS TO BE FURNISHED, AND ARE FOR THE PURPOSE OF COMPARING THE BIDS ON A UNIFORM BASIS. PAYMENT WILL BE MADE BY THE OWNER TO THE CONTRACTOR ONLY FOR THE ACTUAL QUANTITIES OF WORK PERFORMED OR MATERIALS FURNISHED IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS, AND IT IS UNDERSTOOD THAT QUANTITIES MAY INCREASE OR DECREASE WITHOUT IN ANY WAY INVALIDATING THE BID PRICE.
- SEEDING FOR EROSION CONTROL SHALL BE APPLIED ON ALL NON - PAVED AREAS DISTURBED BY THE CONTRACTORS OPERATIONS, INCLUDING EMBANKMENTS, GRADED AREAS, LAYDOWN AREAS, ETC. THE QUANTITY OF PURE LIVE SEED AND TYPE REQUIRED ARE INDICATED BELOW:

COMMON NAME	SCIENTIFIC NAME	LB/ACRE OF PURE LIVE SEED FOR MIXTURES	
		A	B
GREEN SPRANGLETOP	LEPTOCHLOA DUBIA	1.4	-
SIDEOTS GRAMA (PREMIER)	BOUTELLOUA CURTIPENDULA	-	0.6
BERMUDA GRASS (HULLED)	CYNODON DACTYLON	7.4	-
BERMUDA GRASS (UNHULLED)	CYNODON DACTYLON	-	30.0
K-R BLUESTEM	ANDROPOGON ISCHAEMUM	1.2	1.5
BUFFALO GRASS	BUCHLOE DACTYLOIDES	4.2	-
ANNUAL RYE GRASS	LOLIUM MULTIFLORUM	5.0	20.0

MIXTURE - A: RECOMMENDED FOR SANDY SOILS PLANTED BETWEEN DECEMBER 1 THROUGH MAY 1.
 MIXTURE - B: RECOMMENDED FOR ALL SOILS PLANTED BETWEEN MAY 2 THROUGH NOVEMBER 30.

- THE FERTILIZING, SEEDING, AND WATERING OPERATIONS SHALL BE ACCOMPLISHED WITH EQUIPMENT SUITABLE FOR THE REQUIRED FUNCTION. CONTRACTOR SHALL FERTILIZE AND WATER TO ASSURE 95% OF THE SEEDED AREA HAS ESTABLISHED GROWTH WITHIN 45 CALENDAR DAYS. ESTABLISHED GROWTH IS DEFINED AS AT LEAST ONE PLANT PER SQUARE FOOT WITH NO BARE SPOTS LARGER THAN TEN (10) SQUARE FEET.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND MAINTAINING SUFFICIENT TRAFFIC CONTROL MEASURES THROUGHOUT THE CONSTRUCTION PERIOD TO ASSURE A SAFE CONDITION AND TO PROVIDE A MINIMUM OF INCONVENIENCE TO MOTORISTS. ALL TRAFFIC CONTROL DEVICES SHALL COMPLY WITH THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (LATEST EDITION). SEE TXDOT REFERENCE SHEETS 29-34.
- ALL TESTS REQUIRED TO VERIFY MATERIALS AND CONSTRUCTION SHALL BE PERFORMED BY A RECOGNIZED MATERIALS TESTING LABORATORY APPROVED BY THE ENGINEER. THE COST OF THE LABORATORY TESTING WILL BE BORNE BY THE COUNTY.
- THE CONTRACTOR SHALL SUBMIT, FOR ENGINEER'S APPROVAL, TEST REPORTS FOR ALL MATERIALS TO BE USED IN THE PROJECT, TO VERIFY COMPLIANCE WITH THE PROJECT REQUIREMENTS. SUBMITTALS SHALL BE MADE AT LEAST 10 DAYS PRIOR TO INCORPORATING THE ITEM INTO THE WORK. IN-PLACE DENSITY TEST REPORTS VERIFYING COMPACTION OF MATERIALS (SUCH AS SUBGRADE, BASE, H.M.A.C.P., EMBANKMENT, ETC.) SHALL BE SUBMITTED TO THE ENGINEER WITHIN 7 DAYS FOLLOWING INSTALLATION OF THE MATERIAL.
- CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN FOR APPROVAL AND SHALL NOTIFY TO THE HIDALGO COUNTY STREET DEPARTMENT A MINIMUM OF 72 HOURS IN ADVANCE OF CONSTRUCTION PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES. NO CONSTRUCTION SHALL COMMENCE WITH OUT NOTIFICATION AND APPROVED SUBMITTAL OF TRAFFIC CONTROL PLAN. CONTRACTOR SHALL SETUP TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", AND TXDOT PLAN IN SET. THE CONTRACTOR IS RESPONSIBLE FOR THE SAFETY OF PEDESTRIANS AND ALL TRAFFIC FROM CONSTRUCTION RELATED ACTIVITIES DURING THE COURSE OF THIS PROJECT.
- THE CONTRACTOR SHALL NOTIFY PARTIES AFFECTED BY CONSTRUCTION ACTIVITIES A MINIMUM OF 48 HOURS IN ADVANCE OF CONSTRUCTION. THE FOLLOWING ARE TELEPHONE NUMBERS FOR THE ENTITIES MOST LIKELY TO BE AFFECTED:

TEXAS 811.....	811	TEXAS ONE CALL SYSTEM.....	(800) 245-4545
TEXAS EXCAVATION SAFETY SYSTEM.....	(800) 344-8377	LONE STAR NOTIFICATION COMPANY.....	(800) 669-8344
AT&T.....	(800) 288-2020	CENTRAL POWER AND LIGHT (CP&L).....	(800) 274-2611
AMERICAN ELECTRIC POWER (AEP TEXAS).....	(877) 373-4858	SOUTHERN UNION GAS CO.....	(800) 743-2945
US SPRINT CP.....	(956) 948-3100	TIME WARNER CABLE (TWC).....	(800) 222-5355
HIDALGO COUNTY PUBLIC UTILITY.....	(956) 681-1000		

IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY NO OTHER ENTITIES WILL BE AFFECTED.

2. SITE EXCAVATION AND GRADING

- COMPLETELY REMOVE ALL TREES, SHRUBS, AND STUMPS FROM THE CONSTRUCTION AREA. REMOVE ALL CONCRETE SLABS, CONCRETE WALLS, FOUNDATIONS, ETC., ON THE SITE AS REQUIRED TO PROPERLY CONSTRUCT THE PROJECT.
- BEFORE EXCAVATION HAS BEGUN, STRIP THE TOP 12" OF TOPSOIL FROM AREAS TO BE EXCAVATED OR OCCUPIED BY BUILDING, ROADS, WALKS, ETC., AND PILE IN DESIGNATED LOCATIONS WHERE IT WILL NOT INTERFERE WITH BUILDING OR UTILITY OPERATIONS. STRIPPED TOPSOIL SHALL BE FREE FROM LARGE STONES AND DEBRIS. USE TOPSOIL FOR FINISH GRADING. EXCESS TOPSOIL MAY BE USED FOR COMMON SITE FILLS IF AN ADEQUATE STOCKPILE IS RETAINED FOR FINISH GRADING.
- ALL EXCAVATION IS TO BE UNCLASSIFIED; I.E., THE REMOVAL OF ALL MATERIALS AS ENCOUNTERED, WITH NO ADDITIONAL PAYMENTS FOR ROCK EXCAVATION EXCEPT FOR CHANGES IN WORK FROM THAT SHOWN ON THE CONTRACT DRAWINGS.
- PERFORM EXCAVATION OF EVERY TYPE OF MATERIAL ENCOUNTERED WITHIN THE LIMITS OF THE PROJECT, TO THE LINES, GRADES AND ELEVATIONS INDICATED AND AS SPECIFIED HEREIN. PERFORM EXCAVATION AND FILLING IN A MANNER AND SEQUENCE THAT WILL PROVIDE DRAINAGE AT ALL TIMES.
- KEEP ALL EXCAVATIONS DRY BY DIVERTING OR PUMPING SEEPAGE OR SURFACE WATER FROM EXCAVATIONS. PLACE FILLS AT THE LOCATION AND TO THE LINES AND GRADES AS INDICATED. THE COMPLETE FILL SHALL CONFORM TO THE SHAPE OF THE TYPICAL SECTIONS INDICATED OR SHALL MEET THE REQUIREMENTS OF THE PARTICULAR CASE. ALL FILL, EXCEPT FILL UNDER THE BUILDING AREA, SHALL BE SOIL FILL. USE SATISFACTORY ON-SITE SOILS REMOVED FROM THE EXCAVATION TO FORM THE FILL. MATERIAL REQUIRED FOR FILLS IN EXCESS OF THAT PRODUCED BY EXCAVATING WITHIN THE GRADING LIMITS SHALL BE TAKEN FROM APPROVED OFF-SITE AREAS SELECTED BY THE CONTRACTOR. PLACE THE MATERIAL IN SUCCESSIVE HORIZONTAL LAYERS 8" IN LOOSE DEPTH AND COMPACT TO A MINIMUM OF 95% OF STANDARD PROCTOR IN ACCORDANCE WITH ASTM D698 AT MOISTURE CONTENTS -1% TO +3% OF OPTIMUM.
- SELECT NON-EXPANSIVE FILL MATERIAL SHALL CONFORM TO ANY ONE OF THE FOLLOWING SPECIFICATIONS:
 - SELECT NON-EXPANSIVE FILL MATERIAL SHALL BE SOIL CLASSIFIED BY THE UNIFIED SOIL CLASSIFICATION SYSTEM (USCS) IN ACCORDANCE WITH ASTM D2487 AS A SC, GC OR CL SOIL (OR A COMBINATION OF THESE MATERIALS). SELECT NON-EXPANSIVE FILL MATERIAL SHALL HAVE A PLASTICITY INDEX BETWEEN 7 AND 18, A MAXIMUM LIQUID LIMIT OF 40, AND SHALL HAVE A MAXIMUM PARTICLE SIZE OF 2'.
 - SELECT NON-EXPANSIVE FILL SHALL CONFORM TO TXDOT ITEM 247, FLEXIBLE BASE, TYPE E, GRADE 4 .
 - SELECT NON-EXPANSIVE FILL SHALL BE LIME STABILIZED SUBGRADE MATERIALS IN ACCORDANCE WITH TXDOT ITEM 260. STABILIZED SUBGRADE WITH 6% LIME BASED ON THE MAXIMUM DRY UNIT WEIGHT OF THE SUBGRADE AS DETERMINED BY ASTM D698.
- COMPLETE ALL GRADING NECESSARY TO BRING THE ENTIRE AREA SHOWN ON THE DRAWINGS TO THE SUBGRADE LEVELS INDICATED ON THE PLANS AND DETAILS. GRADES NOT OTHERWISE INDICATED SHALL BE UNIFORM LEVELS OR SLOPES BETWEEN POINTS WHERE ELEVATIONS ARE GIVEN, OR BETWEEN SUCH POINTS AND EXISTING FINISH GRADES. ROUND OFF ABRUPT CHANGES IN SLOPES.
- THE TOP 12" OF EXCAVATED AREAS, FILL AREAS OR OTHER DISTURBED AREAS OUTSIDE OF THE BUILDING, PAVING, SIDEWALKS, ETC., SHALL BE TOP SOIL, GRADED TO THE ELEVATIONS SHOWN ON THE PLANS. FINE GRADE THE TOP SOIL WITH HAND TOOLS, RAKE TO A FINE, EVEN SURFACE AND LEAVE IN CONDITION FOR SEEDING AND / OR SODDING.
- STRIPPING TOP SOIL FROM FILL AREAS THAT ARE NOT UNDER BUILDINGS, PARKING LOT, WALKS, ETC., IS NOT REQUIRED. BEFORE STARTING THE FIRST LIFT OF FILL, SCARIFY, MOISTURE CONDITION AND COMPACT THE TOP 6" OF EXISTING MATERIAL TO A MINIMUM OF 95% OF STANDARD PROCTOR IN ACCORDANCE WITH ASTM D698 AT MOISTURE CONTENTS - 1% TO + 3% OF OPTIMUM.
- PAVEMENT MATERIALS, THICKNESS AND INSTALLATION SHALL BE AS SHOWN ON THE PLANS AND DETAILS.
- ALL DISTURBED AREAS OF THE SITE MUST HAVE VEGETATION RE-ESTABLISHED BY THE CONTRACTOR.
- THE CONTRACTOR SHALL SUBMIT A PLAN FOR ESTABLISHING VEGETATION ON ALL DISTURBED AREAS OF THE SITE. THE METHOD FOR ESTABLISHING VEGETATION SHALL BE PRE-APPROVED BY THE ENGINEER.
- AT A MINIMUM, ALL DISTURBED AREAS SHALL BE RE-SEEDDED WITH BERMUDA GRASS AND WATERED A MINIMUM OF THREE MONTHLY CYCLES. WATER SHALL BE APPLIED EVERY TWO WEEKS AT THE RATE OF 6,800 GALLONS PER ACRE PER WATERING. WATER SHALL BE APPLIED SO AS NOT TO CAUSE EXCESSIVE EROSION.
- AREAS OF EROSION THAT OCCUR BEFORE VEGETATION IS ESTABLISHED SHALL BE IMMEDIATELY RESHAPED AND REPAIRED BY THE CONTRACTOR TO THE LINES AND GRADES SHOWN ON THE GRADING PLANS TO THE SATISFACTION OF THE ENGINEER. NO ADDITIONAL PAYMENT WILL BE MADE FOR EROSION REPAIR WORK.
- AS DIRECTED BY THE ENGINEER THE CONTRACTOR SHALL ADJUST THE RATE AND FREQUENCY OF WATERING TO ACCOUNT FOR ACTUAL FIELD CONDITIONS SUCH AS RAIN, SOIL TEMPERATURE, AIR TEMPERATURE, SUNNY VS. CLOUDY DAYS, ETC. INCREASING THE GALLONS PER WATERING TO DECREASE THE NUMBER OF WATERINGS WILL NOT BE PERMITTED.
- RE-VEGETATION OF THE SITE IS REQUIRED FOR COMPLIANCE WITH STORM WATER POLLUTION PREVENTION REGULATIONS AND IS INDEPENDENT OF LANDSCAPING REQUIREMENTS. ALL DISTURBED AREAS OF THE SITE MUST BE RE-VEGETATED REGARDLESS OF FUTURE LANDSCAPE DESIGNS.
- THE FOLLOWING PARTIAL LISTING OF SUBMITTALS SHALL BE FORWARDED TO THE ENGINEER FOR REVIEW. THE WORK ASSOCIATED WITH THESE ITEMS SHALL NOT COMMENCE UNTIL THE SUBMITTALS HAVE BEEN REVIEWED AND APPROVED BY THE ENGINEER.
- SUBMIT GRADATION, ATTERBURG LIMITS, AND MOISTURE DENSITY CURVES FOR EACH TYPE OF EXISTING SUBGRADE ENCOUNTERED AND FOR EACH TYPE OF FILL MATERIAL USED.
- SUBMIT MIX DESIGNS WITH TEST DATA FOR EACH TYPE AND STRENGTH OF CONCRETE SPECIFIED.
- SUBMIT REINFORCING STEEL SHOP DRAWINGS DETAILING REINFORCEMENT FABRICATION AND BAR PLACEMENT. THE SHOP DRAWINGS SHALL INCLUDE A COMPLETE BILL OF MATERIALS FOR ALL REINFORCING STEEL, WHICH IS REFERENCED TO THE INFORMATION ON THE SHOP DRAWINGS. THE SHOP DRAWINGS SHALL PROVIDE SUFFICIENT DETAIL TO PERMIT PLACEMENT OF THE REINFORCEMENT WITHOUT THE USE OF THE DESIGN DRAWINGS.
- SUBMIT DESCRIPTIVE LITERATURE, BULLETINS, TECHNICAL DATA SHEETS, MATERIAL SAFETY DATA SHEETS, AND INSTALLATION INSTRUCTIONS FOR CONSTRUCTION AND CONTROL JOINT MATERIALS / FILLERS AND OTHER MISCELLANEOUS APPURTENANCES AND PRODUCTS SPECIFIED HEREIN. SUBMITTALS FOR PRECAST OR PREFABRICATED ASSEMBLIES SHALL BEAR THE SEAL OF AN ENGINEER LICENSED TO PRACTICE IN THE STATE OF TEXAS CERTIFYING THAT THE PRODUCT MEETS ALL APPLICABLE DESIGN CONDITIONS AND CONFORMS TO GOVERNING CODE REQUIREMENTS.
- SUBMIT ANY PROPOSED SUBSTITUTIONS TO THE ITEMS SPECIFIED HEREIN OR IN THE SPECIFICATIONS. OWNER RESERVES THE RIGHT TO REJECT ANY PROPOSED SUBSTITUTION IN FAVOR OF THAT SPECIFIED.

TESTING SCHEDULE

DESCRIPTION	RATE	QUANTITY
SOILS:		
STANDARD PROCTOR - SUBGRADE	PER STREET	1
DENSITIES - SUBGRADE (PAVEMENT)	PER 325 SY	1
CALICHE BASE:		
SEIVE ANALYSIS	PER 3000 CY	1
ATTERBURG LIMITS	PER 3000 CY	1
MODIFIED PROCTOR	PER 3000 CY	1
L.A. ABRASION	PER 3000 CY	1
CBR (STANDARD)	PER MATERIAL SOURCE	1
DENSITIES OF COMPACTED BASE (PAVEMENT)	PER 325 SY	1
WET BALL MILL TEST	PER MATERIAL SOURCE	1
TRIAIAL TEST	PER MATERIAL SOURCE	1
HOT-MIX ASPHALT CONCRETE (HMAC):		
EXTRACTION, SEIVE ANALYSIS	PER 500 TONS OR DAY	1
LAB DENSITY & STABILITY	PER 500 TONS OR DAY	1
THEORETICAL DENSITY (RICE METHOD)	PER 500 TONS OR DAY	1
TEMPERATURE - DURING LAY-DOWN	CONTINUOUS AS NEEDED	-
THICKNESS - IN PLACE (CORE)	PER 1000 LF	1
PER AIR VOID IN PLACE (CORE)	PER 1000 LF	1
% THEORETICAL DENSITY - IN PLACE (CORE)	PER 1000 LF	1
CONCRETE:		
(UNCONFINED COMPRESSION, 7, 14, & 28 DAY)	PER 4000 SF	1

NOTE: CONTRACTOR TO COORDINATE WITH ENGINEER FOR MATERIAL TESTING AND LOCATION.

CALL 811 BEFORE YOU DIG

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PROJECT NO. 16100-17

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1722 N. GLOMER BLVD., SUITE B
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HIDALGO COUNTY
PRECINCT NO. 1

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County Commissioner PCT No. 1

HIDALGO COUNTY
PRECINCT No. 1 AREA
ROAD DISTRESS MAINTENANCE

GENERAL NOTES

DRAWING NO.
C1
SHEET 2 of 33

FILE NAME: Z:\2016\Engineering\Hidalgo County\Precinct No.1\Title 1.5 - J. Flores, Englemen, Las Cumbres & Mile 20 N\Drawings\Civil\02-C1-GENERAL NOTES.dwg LAYOUT NAME: Model PLOTTED: Monday, November 07, 2016 - 2:35pm USER: Administrator




FILE NAME: Z:\2016\Engineering\Hidalgo County\Precinct No.1\Mile 1.5, J. Flores, Engleman, Las Cumbres & Mile 20 N\Drawings\Civil\03-C2-LOCATION MAP - .dwg LAYOUT NAME: Layout1 PLOTTED: Monday, November 07, 2016 - 2:35pm USER: Administrator



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REVISION NO.	DATE	BY	DESCRIPTION




HIDALGO COUNTY PRECINCT NO. 1 AREA ROAD DISTRESS MAINTENANCE		HIDALGO COUNTY PRECINCT NO. 1 1902 Joe Stephens Ave. Weslaco, TX 78596 Tel. (956) 968-8733 Fax. (956) 969-1417 A.C. CUELLAR JR. County Commissioner PCT No. 1	
DRAWING NO. C2		SHEET 3 of 33	

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 INTERNATIONAL CONSULTING ENGINEERS 1722 N. CLOSER BLVD., SUITE B ENHURST, TX 78841 PHONE: 956-323-5404 FAX: 361-626-5896 I.B.P.E. FIRM REGISTRATION #F-10837	
 	

FILE NAME: Z:\2016\Engineering\Hidalgo County\Precinct No.1\Mile 1.5, J. Flores, Engineman, Las Cumbres & Mile 20 N\Drawings\Civil\04-C3-LOCATION MAP - .dwg LAYOUT NAME: Layout1 PLOTTED: Monday, November 07, 2016 - 2:36pm USER: Administrator

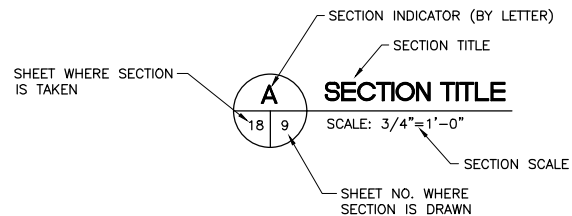
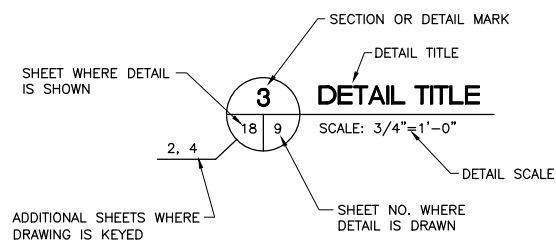
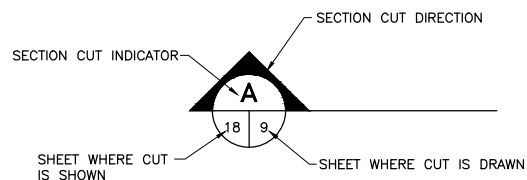
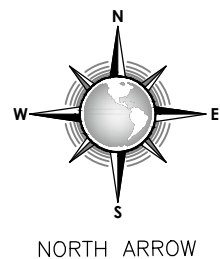


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REVISION NO.	DATE	BY	DESCRIPTION
			HIDALGO COUNTY PRECINCT NO. 1 AREA ROAD DISTRESS MAINTENANCE
			LOCATION MAP
			DRAWING NO. C3
			SHEET 4 of 33
			HIDALGO COUNTY PRECINCT NO. 1 1902 Joe Stephens Ave. Weslaco, TX 78596 Tel. (956) 968-8733 Fax. (956) 969-1417 A.C. CUELLAR JR. County Commissioner PCT No. 1
			 
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FILE NAME: Z:\2016\Engineering\Hidalgo County\Precinct No. 1\Mile 1.5, J. Flores, Englemann, Las Cumbres & Mile 20 N\Drawings\Civil\05-C4--ESTIMATED QUANTITIES.dwg LAYOUT NAME: Model PLOTTED: Monday, November 07, 2016 - 2:36pm USER: Administrator

ESTIMATED QUANTITIES SUMMARY - TOTALS			
ITEM	DESCRIPTION	UNIT	QUANTITY
HIDALGO COUNTY, TEXAS			
MILE 1.5 WEST IMPROVEMENTS BASE BID:			
A1	TRAFFIC CONTROL	LS	1
A2	SIGNS	LS	1
A3	EXCAVATION (PAVEMENT AND 4" CALICHE)	CY	2,607
A4	LIME	TNS	45
A5	6" NEW CALICHE FLEXIBLE BASE (COMPACTED IN PLACE)	SY	16,426
A6	PRIME COAT (MC-30)	Gal	2,933
A7	2" ASPHALT Ty "D"	TNS	1,605
A8	REGRADE ROADSIDE DITCH	LF	10,260
JESUS FLORES RD IMPROVEMENTS BASE BID:			
B1	TRAFFIC CONTROL	LS	1
B2	SIGNS	LS	1
B3	EXCAVATION (PAVEMENT AND 4" CALICHE)	CY	296
B4	LIME	TNS	5
B5	6" NEW CALICHE FLEXIBLE BASE (COMPACTED IN PLACE)	SY	1,867
B6	PRIME COAT (MC-30)	Gal	333
B7	2" ASPHALT Ty "D"	TNS	182.4
B8	REGRADE ROADSIDE DITCH	LF	1,200
ENGLEMAN RD IMPROVEMENTS BASE BID:			
C1	TRAFFIC CONTROL	LS	1
C2	SIGNS	LS	1
C3	EXCAVATION	CY	52
C4	6" NEW CALICHE FLEXIBLE BASE (COMPACTED IN PLACE)	SY	7,480
C5	REGRADE ROADSIDE DITCH	LF	5,280
LAS CUMBRES DR. IMPROVEMENTS BASE BID:			
D1	TRAFFIC CONTROL	LS	1
D2	SIGNS	LS	1
D3	EXCAVATION (PAVEMENT AND 4" CALICHE)	CY	403
D4	LIME	TNS	6.65
D5	6" NEW CALICHE FLEXIBLE BASE (COMPACTED IN PLACE)	SY	2,417
D6	PRIME COAT (MC-30)	Gal	500
D7	2" ASPHALT Ty "D"	TNS	276
D8	REGRADE ROADSIDE DITCH	LF	1,500
MILE 20 NORTH RD IMPROVEMENTS BASE BID:			
E1	TRAFFIC CONTROL	LS	1
E2	SIGNS	LS	1
E3	EXCAVATION	CY	52
E4	6" NEW CALICHE FLEXIBLE BASE (COMPACTED IN PLACE)	SY	10,472
E5	REGRADE ROADSIDE DITCH	LF	7,392



LEGEND

EXISTING LEGEND	
—X—	FENCE
—OH—	OVERHEAD ELECTRICAL
—W—	WATER
—SS—	SANITARY SEWER
—ST—	STORM
←	GUY WIRE
PP	POWER POLE
WV	WATER VALVE
FH	FIRE HYDRANT
—	EDGE OF BANK
---1.00---	CONTOUR
---	RIGHT-OF-WAY
●	FOUND 1/2" IRON ROD
●	FOUND 3/4" IRON PIPE
⊙	FOUND 5/8" IRON ROD

PROPOSED LEGEND	
[Pattern]	CONCRETE
[Symbol]	SIGN
[Symbol]	SEDIMENT CONTROL FENCE
[0.00TA]	TOP OF ASPHALT GRADE
[0.00TC]	TOP OF CONCRETE ELEVATION
(73.1)	SWALE FLOWLINE
[Pattern]	REGRADE EXIST DITCH
→	FLOW DIRECTION
⊙	PLUG AT END
[Pattern]	LIMITS OF ASPHALT REPAIR
[Pattern]	LIMITS OF PROPOSED SEEDING
⊙	MANHOLE
◆	FIRE HYDRANT
▲	WATER VALVE
—6"W—	WATER LINE
⊙	WATER LINE CONNECTION

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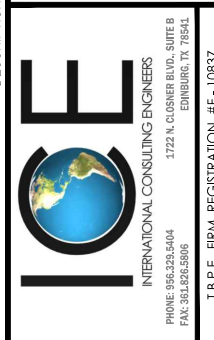
<p>HIDALGO COUNTY PRECINCT NO. 1</p> <p>1902 Joe Stephens Ave. Weslaco, TX 78596 Tel. (956) 968-8733 Fax. (956) 969-1417 A.C. CUELLAR JR. County Commissioner PCT No. 1</p>	<p>INTERNATIONAL CONSULTING ENGINEERS 1722 N. CLOSER BLVD., SUITE B ENHURST, TX 78941 PHONE: 956-323-5404 FAX: 361-626-5896 I.B.P.E. FIRM REGISTRATION #F-10837</p>
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<p>HIDALGO COUNTY PRECINCT No. 1 AREA ROAD DISTRESS MAINTENANCE</p>	<p>ESTIMATED QUANTITIES</p>
-----------------------------------------------------------------------------	-----------------------------

DRAWING NO.	C4
SHEET	5 of 33

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PROJECT NO. 16100-17

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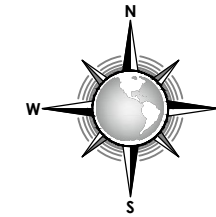


HIDALGO COUNTY
PRECINCT No. 1 AREA
ROAD DISTRESS MAINTENANCE

DRAWING NO.
C4
SHEET 5 of 33

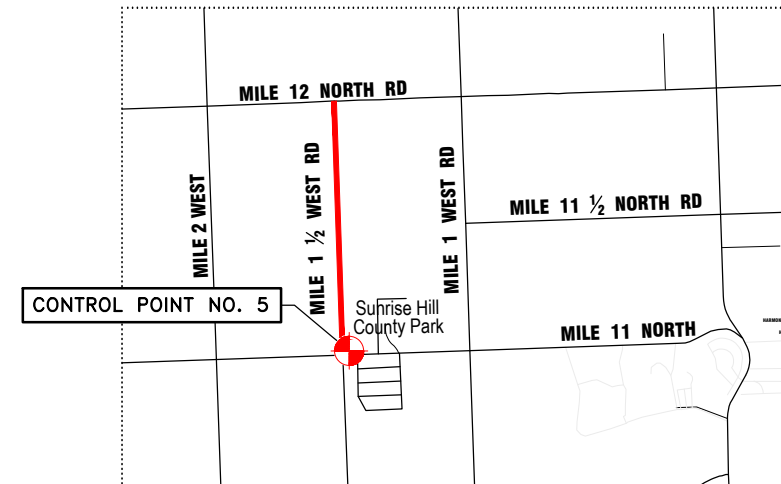
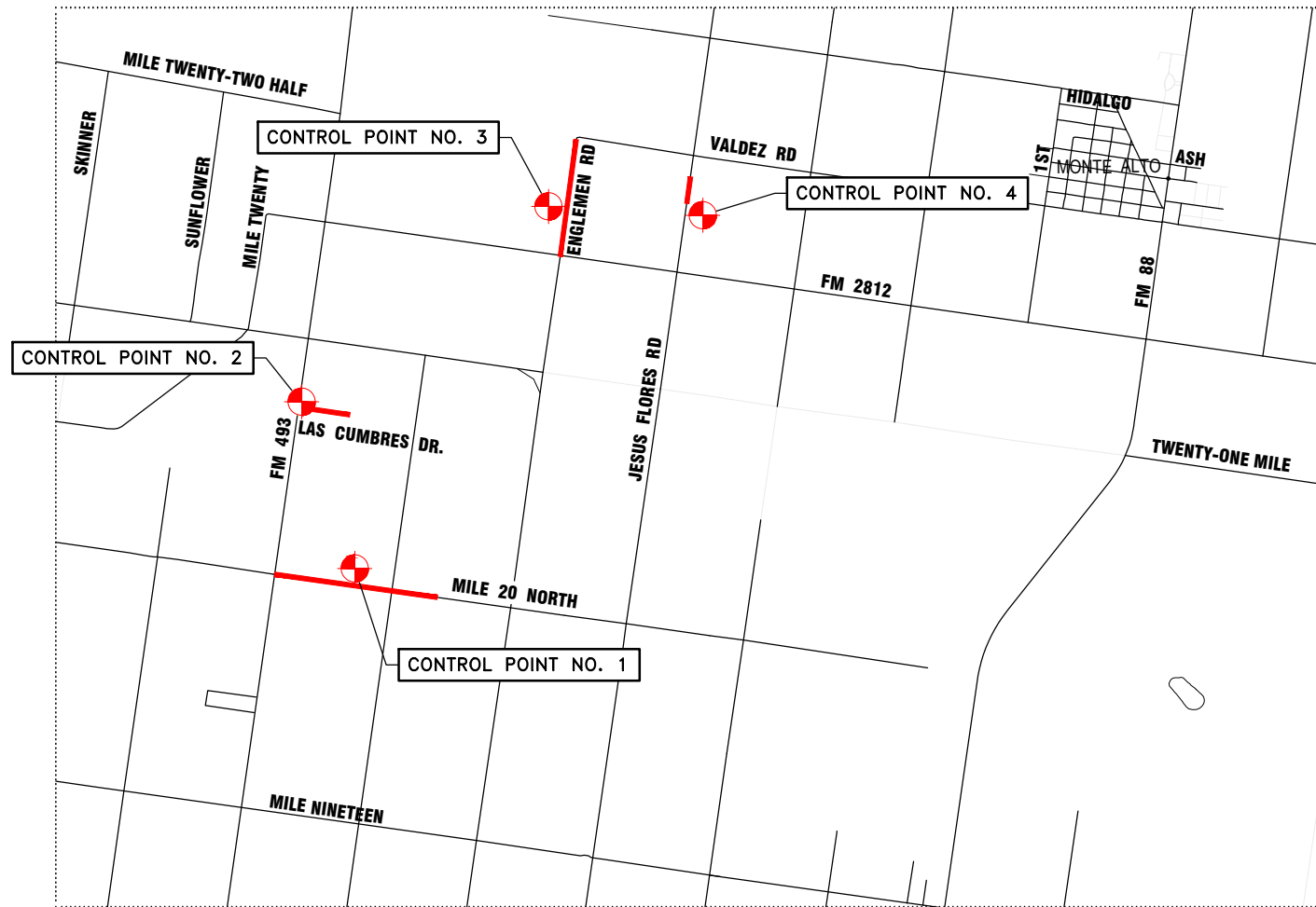
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CONTROL POINT DATA				
CONTROL POINT #	DESCRIPTION	NORTHING	EASTING	ELEVATION
1	6" CUT IN CONC. ON NW HEADWALL OF CONC CANAL	16652527.71	1139386.95	68.30
2	6" CUT IN CONC. ON SW COR. OF PARKING LOT CURB	16656417.23	1138743.27	62.02
3	1/2" REBAR	16660858.16	1144688.89	61.34
4	60d NAIL ON ASPHALT	16660792.52	1147387.24	58.33
5	1/2" REBAR NEAR SW COR. OF LIFT STATION	16652527.71	1139386.95	68.30



LEGEND

= CONTROL POINT



A EXISTING TOPOGRAPHY & CONTROL DATA
 C3 C3 SCALE: 1"=100'



SCALE: 1"=2000'

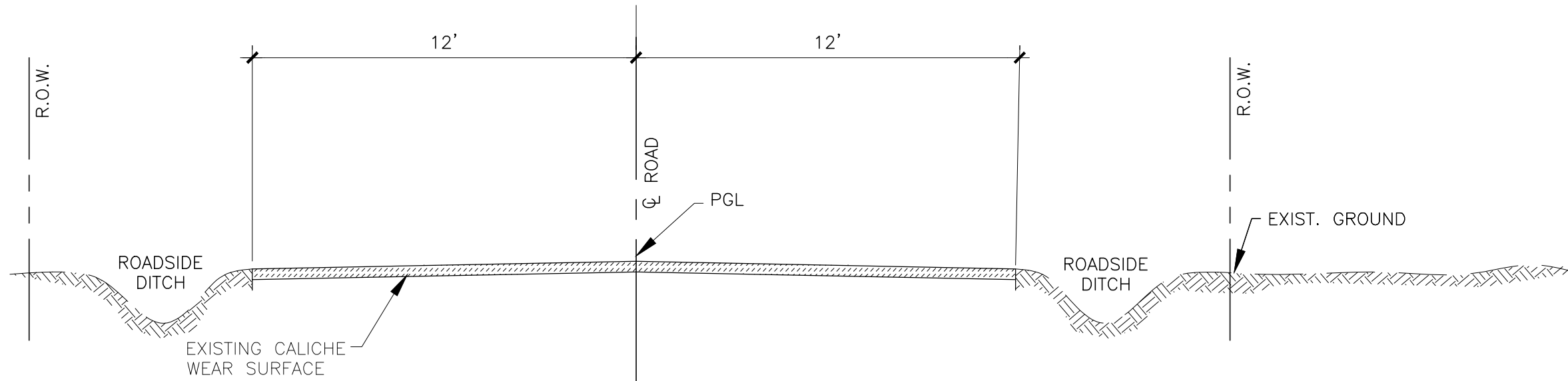
SURVEY DATUM

HORIZONTAL: NAD 83
 VERTICAL: NAVD 88

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HIDALGO COUNTY PRECINCT NO. 1 AREA ROAD DISTRESS MAINTENANCE CONTROL DATA			DRAWING NO. C5 SHEET 6 of 33

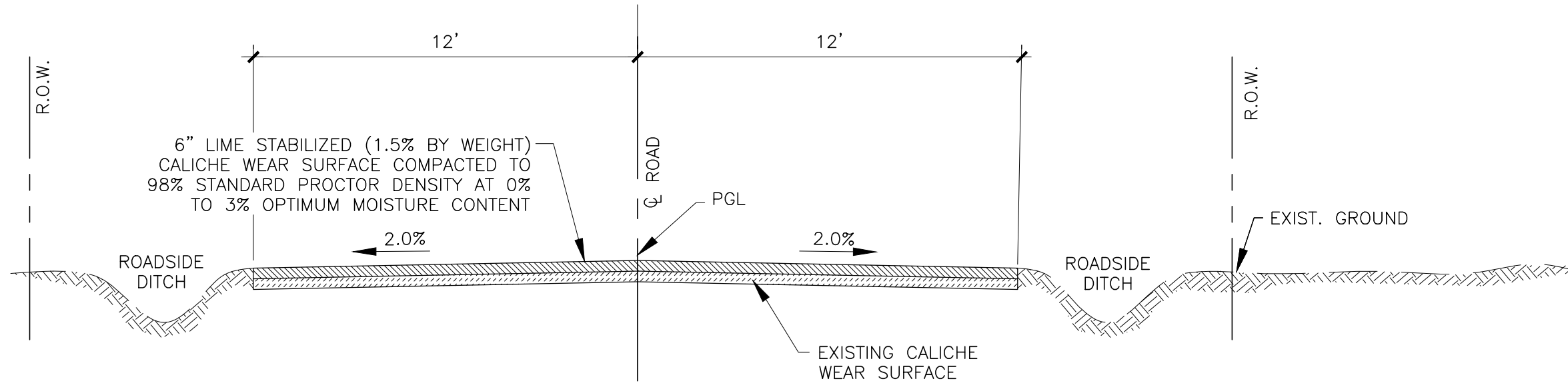
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EXISTING TYPICAL ROADWAY SECTION

SCALE: N.T.S.

MILE 20 NORTH ROAD
ENGLEMAN ROAD



PROPOSED TYPICAL ROADWAY SECTION

SCALE: N.T.S.

MILE 20 NORTH ROAD
ENGLEMAN ROAD

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REVISION NO.	DATE	DESCRIPTION	BY
		HIDALGO COUNTY PRECINCT NO. 1 ROAD DISTRESS MAINTENANCE	
		PROPOSED ROADWAY SECTIONS	
		DRAWING NO. C6	
		SHEET 7 of 33	

CONSULTANT'S SHEET
PROJECT NO. 16100-17

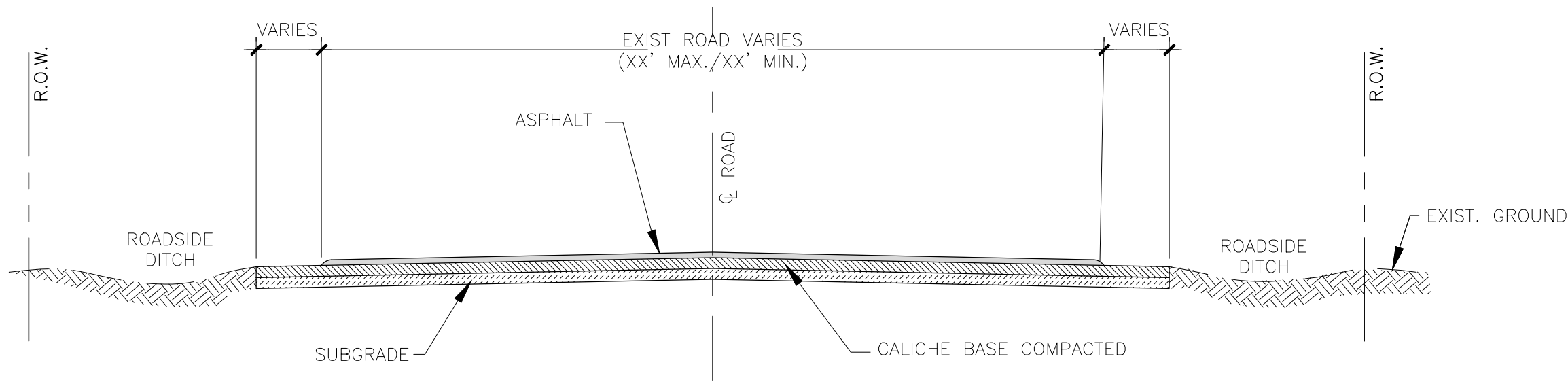
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Hidalgo County
Project 1

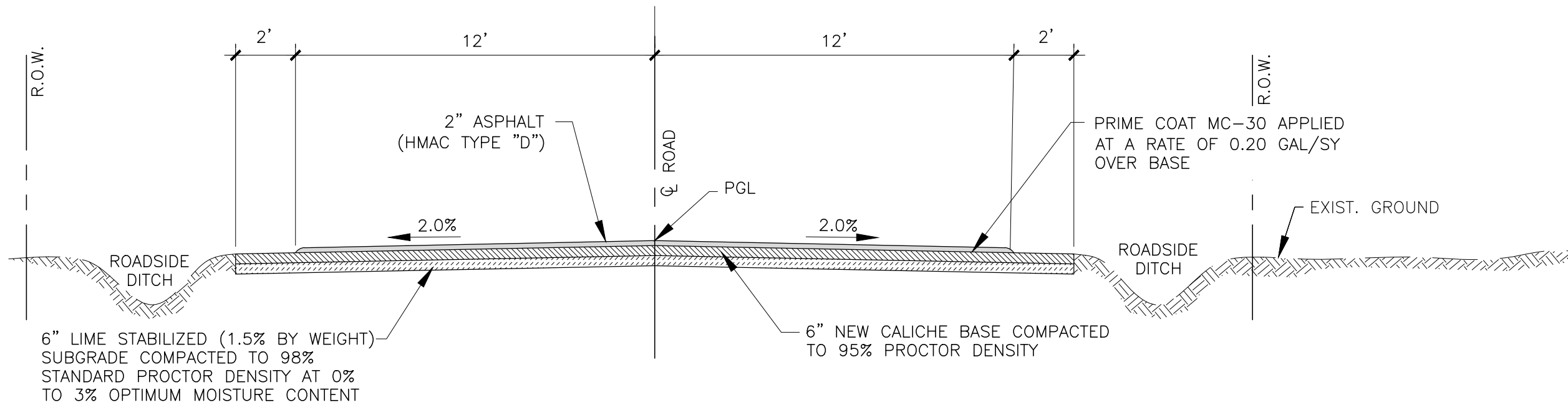
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EXISTING TYPICAL ROADWAY SECTION

SCALE: N.T.S.

MILE 1 1/2 NORTH ROAD
JESUS FLORES ROAD



PROPOSED TYPICAL ROADWAY SECTION

SCALE: N.T.S.

MILE 1 1/2 NORTH ROAD
JESUS FLORES ROAD

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			HIDALGO COUNTY PRECINCT NO. 1 ROAD DISTRESS MAINTENANCE
			PROPOSED ROADWAY SECTIONS
			DRAWING NO. C7
			SHEET 8 of 33

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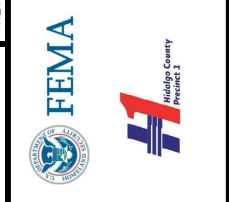
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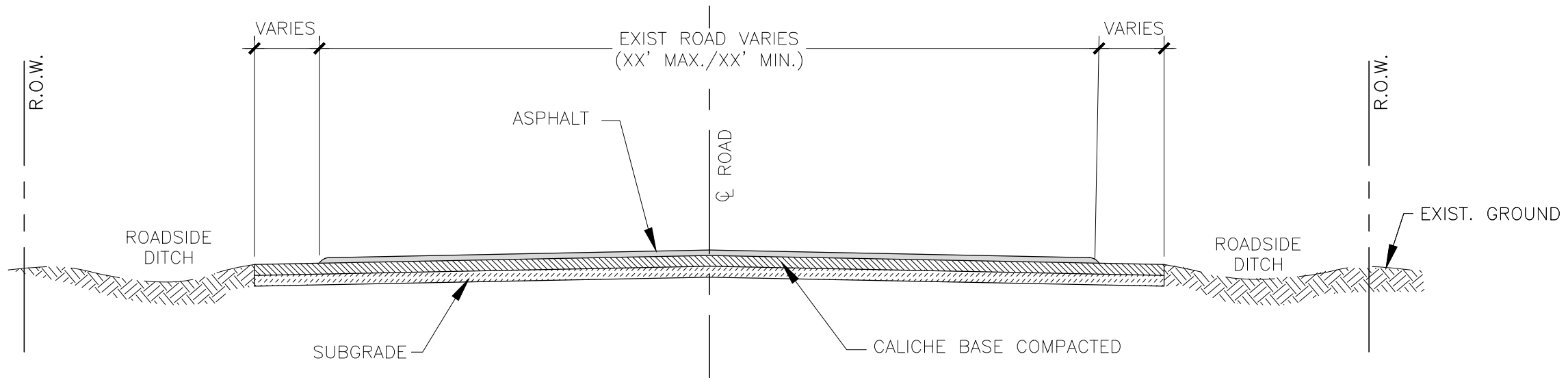
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ENID, OKLAHOMA 73644
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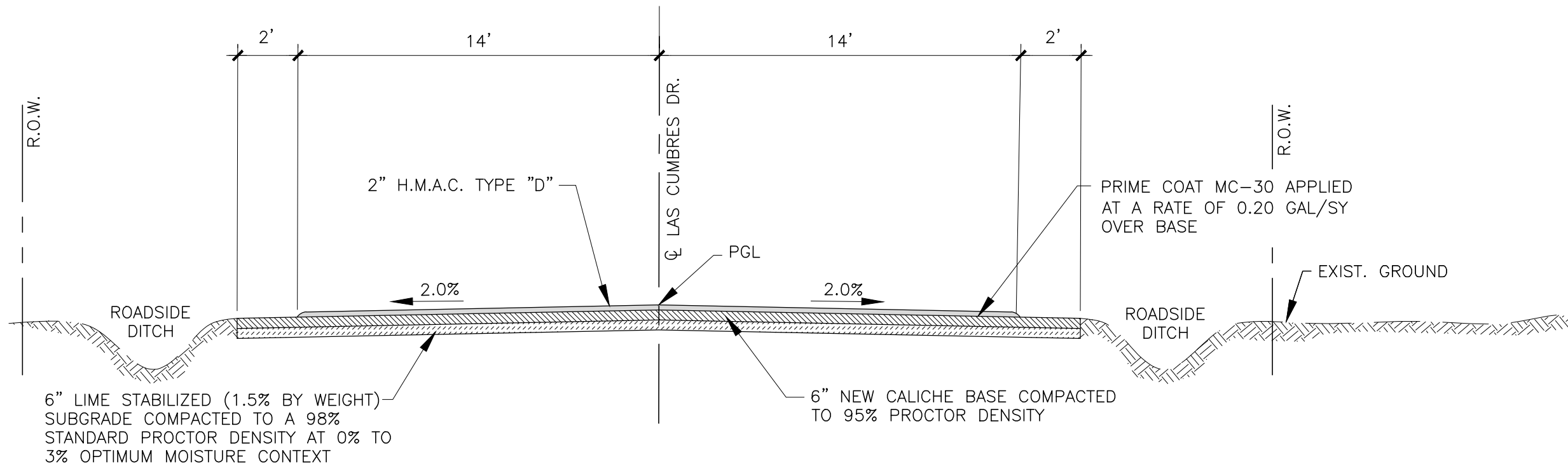
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EXISTING TYPICAL ROADWAY SECTION

SCALE: N.T.S.

LAS CUMBRES DRIVE



PROPOSED TYPICAL ROADWAY SECTION

SCALE: N.T.S.

LAS CUMBRES DRIVE

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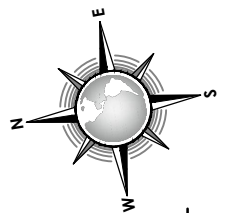
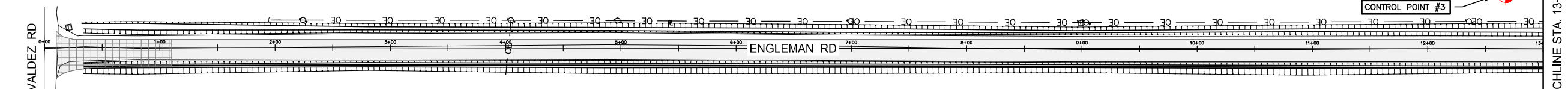
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HIDALGO COUNTY
PRECINCT No. 1 AREA
ROAD DISTRESS MAINTENANCE
PROPOSED ROADWAY SECTIONS

DRAWING NO.
C8
SHEET 9 of 33

REVISION NO.	DATE	DESCRIPTION	BY

FILE NAME: Z:\2016\Engineering\Hidalgo County\Precinct No.1\Map 1.5_Jr. Flores, Engleman, Los Cumbres & Mile 20\Drawings\Civil\10-09-EXISTING TOPOGRAPHY & CONTROL DATA - ENGLEMAN ROAD.dwg LAYOUT NAME: Layout1 PLOTTED: Monday, November 07, 2016 2:37pm USER: Administrator



CONTROL POINT DATA				
CONTROL POINT #	DESCRIPTION	NORTHING	EASTING	ELEVATION
3	1/2" REBAR	16660858.16	1144688.89	61.34

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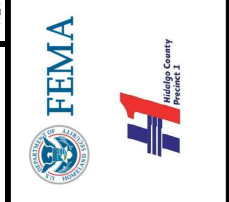
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County Commissioner PCT No. 1



HIDALGO COUNTY
PRECINCT No. 1 AREA
ROAD DISTRESS MAINTENANCE

EXISTING TOPOGRAPHY AND CONTROL DATA
ENGLEMAN ROAD

DRAWING NO.
C9

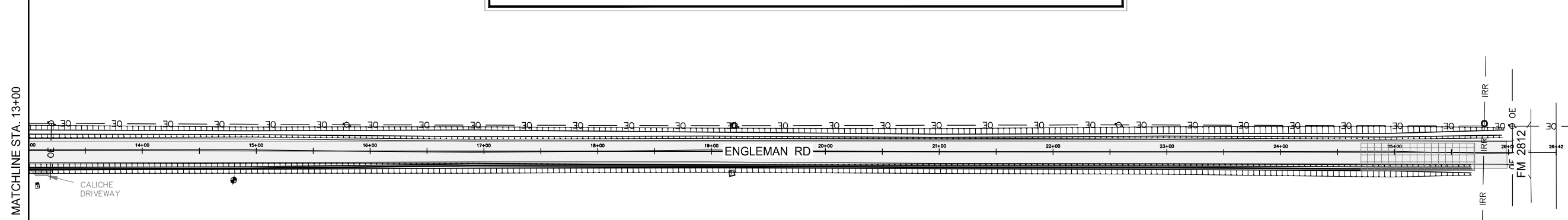
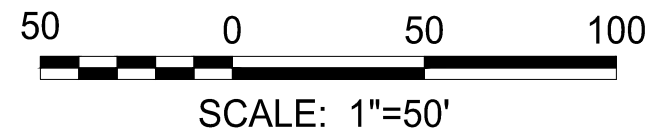
SHEET 10 of 33

LEGEND		
— □ —		= EXISTING GAS MARKER
— X —		= EXISTING CHAINLINK FENCE
— OH —		= EXISTING OVERHEAD ELECTRIC LINE
69.60 NG		= NATURAL GROUND
70.32 SE		= PAVEMENT SURFACE ELEVATION
		= CONTROL POINT
		= EXISTING GAS MARKER
		= EXISTING GUY WIRE
		= EXISTING TELEPHONE PEDESTAL
		= EXISTING WATER METER
		= EXISTING POWER POLE
		= EXISTING IRRIGATION STANDPIPE

A EXISTING TOPOGRAPHY & CONTROL DATA
SCALE: 1"=100'

SURVEY DATUM

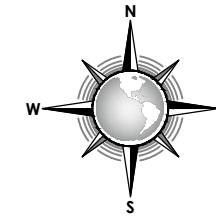
HORIZONTAL: NAD 83
VERTICAL: NAVD 88



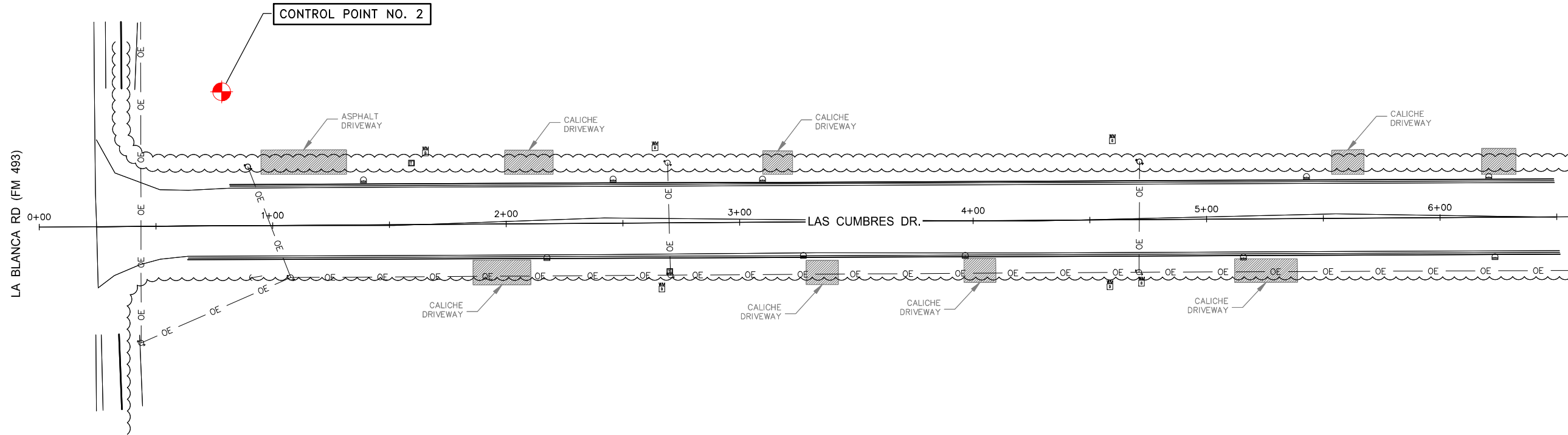
REVISION NO.	DATE	BY	DESCRIPTION

FILE NAME: Z:\2016\Engineering\Hidalgo County\Precinct No.1\Map 1.5, J. Flores, Engleman, Las Cumbres, Las Cumbres & Mile 20 (N\Drawings\Civil\12-C11-EXISTING TOPOGRAPHY & CONTROL DATA - LAS CUMBRES ROAD.dwg LAYOUT NAME: Layout1 - PLOTTED: Monday, November 07, 2016 - 2:37pm USER: Administrator

CONTROL POINT DATA				
CONTROL POINT #	DESCRIPTION	NORTHING	EASTING	ELEVATION
2	1/2" REBAR	16656417.23	1138743.27	62.02



LEGEND	
—□—	= EXISTING GAS MARKER
—X—	= EXISTING CHAINLINK FENCE
—OH—	= EXISTING OVERHEAD ELECTRIC LINE
69.60 NG	= NATURAL GROUND
70.32 SE	= PAVEMENT SURFACE ELEVATION
⊙	= CONTROL POINT
⊠	= EXISTING TELEPHONE PEDESTAL
⊡	= EXISTING WATER METER
⊕	= EXISTING POWER POLE
⊙	= EXISTING IRRIGATION STANDPIPE
⊠	= EXISTING GUY WIRE



A EXISTING TOPOGRAPHY & CONTROL DATA
 C11 | C11 SCALE: 1"=100'



SURVEY DATUM
HORIZONTAL: NAD 83
VERTICAL: NAVD 88

90% REVIEW SUBMITTAL

REVISION NO.	DATE	DESCRIPTION	BY
		HIDALGO COUNTY PRECINCT NO. 1 ROAD DISTRESS MAINTENANCE	
		EXISTING TOPOGRAPHY AND CONTROL DATA LAS CUMBRES ROAD	
		DRAWING NO.	
		C11	
		SHEET 12 of 33	

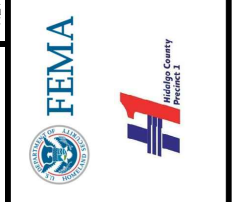
CONSULTANT'S SHEET
PROJECT NO. 16100-17

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF REVIEW UNDER THE AUTHORITY OF LUIS J. NAVA
 P.E.# 94121
 ON 11/07/16
 IT IS NOT TO BE USED FOR ANY OTHER PURPOSE.

IE
 INTERNATIONAL CONSULTING ENGINEERS
 1722 N. GLOSTER BLVD., SUITE B
 ENID, OKLAHOMA 73614
 PHONE: 580.323.5404
 FAX: 580.323.5898
 I.B.P.E. #FIRM REGISTRATION #F-10837

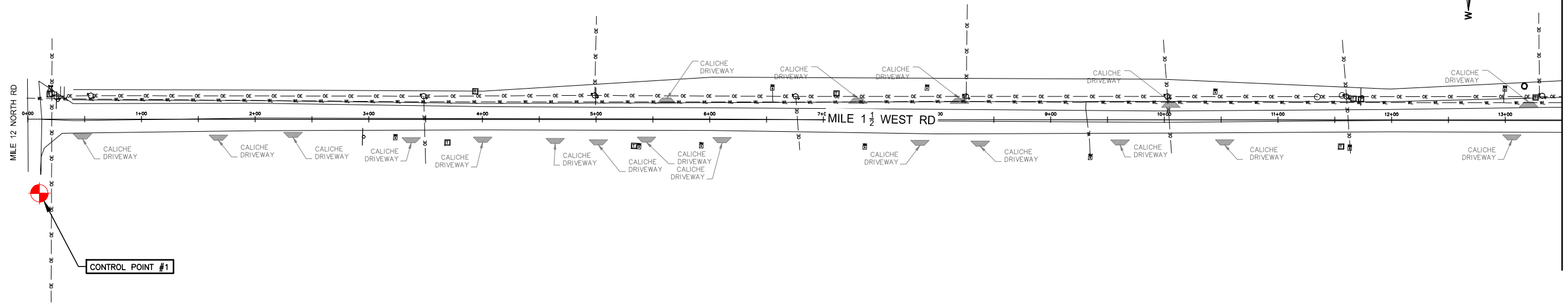
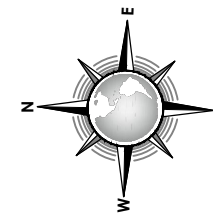
HIDALGO COUNTY
PRECINCT NO. 1

1902 Joe Stephens Ave.
Weslaco, TX 78596
Tel. (956) 968-8733
Fax. (956) 969-1417
A.C. CUELLAR, JR.
County Commissioner PCT No. 1



FILE NAME: Z:\2016\Engineering\Hidalgo County\Precinct No.1\Map 1.5.Jr. Flores, Engleman, Los Cumbres & Mile 20\Drawings\Civil\C12-EXISTING TOPOGRAPHY & CONTROL DATA - MILE 1.5 ROAD.dwg LAYOUT NAME: Layout1 PLOTTED: Monday, November 07, 2016 - 2:38pm USER: Administrator

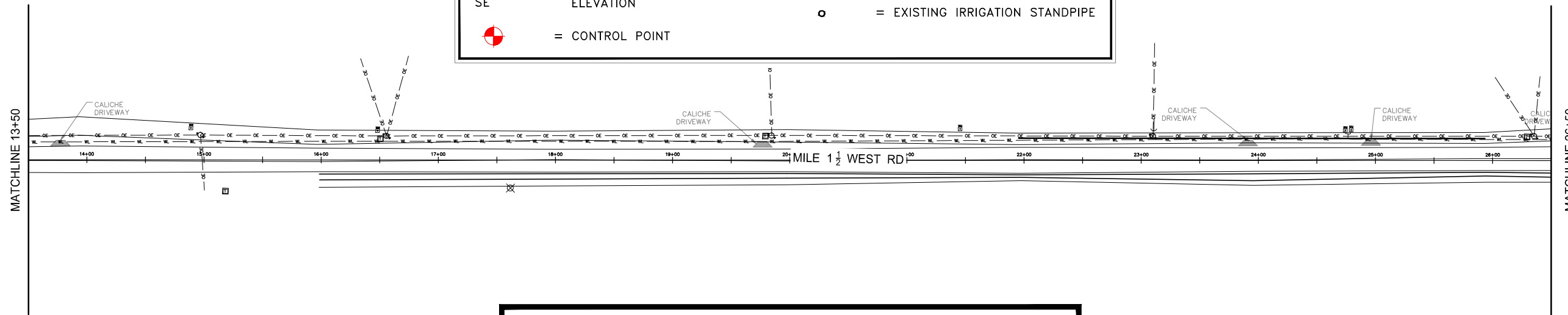
CONTROL POINT DATA				
CONTROL POINT #	DESCRIPTION	NORTHING	EASTING	ELEVATION
1	5/8" REBAR w\ CAP	16603724.09	1169416.47	61.02



MATCHLINE 13+50

90% REVIEW SUBMITTAL

LEGEND	
— □ —	⊗ = EXISTING GAS MARKER
— X —	← = EXISTING GUY WIRE
— OH —	□ = EXISTING TELEPHONE PEDESTAL
69.60 NG	⊗ = EXISTING WATER METER
70.32 SE	⊗ = EXISTING POWER POLE
⊙	⊙ = EXISTING IRRIGATION STANDPIPE
⊙	⊙ = CONTROL POINT



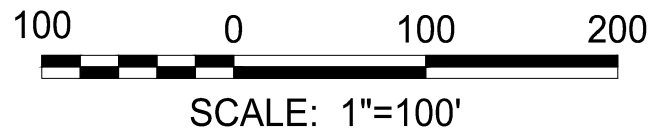
MATCHLINE 26+50

A

C12
C12

EXISTING TOPOGRAPHY & CONTROL DATA

SCALE: 1"=50'



SURVEY DATUM

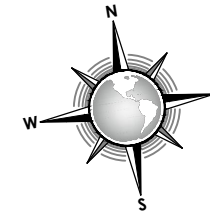
HORIZONTAL: NAD 83

VERTICAL: NAVD 88

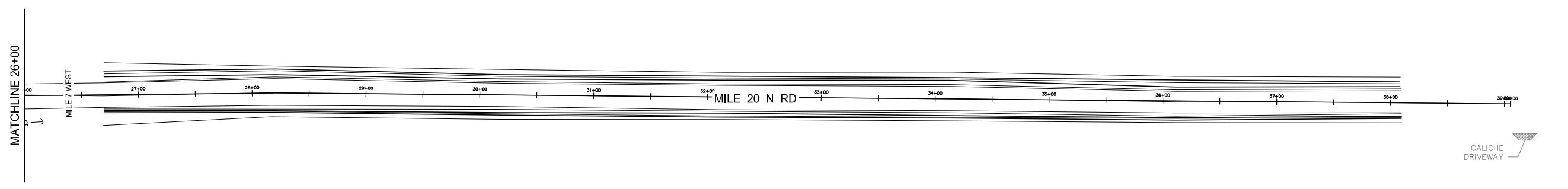
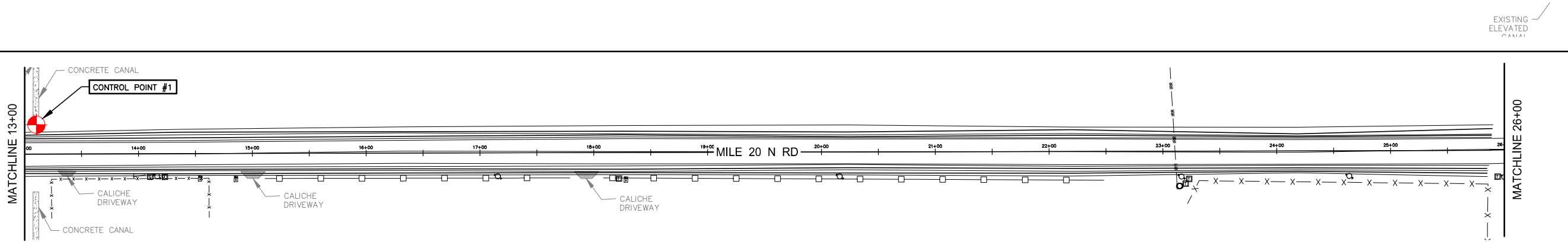
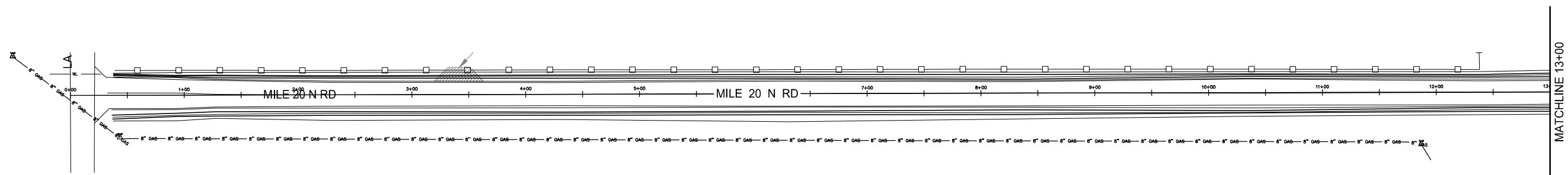
REVISION NO.	DATE	BY	DESCRIPTION	CONSULTANT'S SHEET PROJECT NO. 16100-17 THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF REVIEW UNDER THE AUTHORITY OF LUIS J. NAVA P.E.# 94121 ON 11/07/16 IT IS NOT TO BE USED FOR ANY OTHER PURPOSE.
REVISION NO.	DATE	BY	DESCRIPTION	 INTERNATIONAL CONSULTING ENGINEERS 1722 N. CLOSER BLVD., SUITE B EDINBURG, TX 78541 PHONE: 956.323.5404 FAX: 361.626.5896 I.B.P.E. FIRM REGISTRATION #F-10837
REVISION NO.	DATE	BY	DESCRIPTION	HIDALGO COUNTY PRECINCT NO. 1 1902 Joe Stephens Ave. Weslaco, TX 78596 Tel. (956) 968-8733 Fax. (956) 969-1417 A.C. CUELLAR JR. County Commissioner PCT No. 1
REVISION NO.	DATE	BY	DESCRIPTION	
REVISION NO.	DATE	BY	DESCRIPTION	HIDALGO COUNTY PRECINCT NO. 1 AREA ROAD DISTRESS MAINTENANCE EXISTING TOPOGRAPHY AND CONTROL DATA MILE 1 1/2 WEST ROAD
REVISION NO.	DATE	BY	DESCRIPTION	DRAWING NO.
REVISION NO.	DATE	BY	DESCRIPTION	<div style="font-size: 24px; font-weight: bold; text-align: center;">C12</div>
REVISION NO.	DATE	BY	DESCRIPTION	SHEET 13 of 33

FILE NAME: Z:\2016\Engineering\Hidalgo County\Precinct No.1\Mile 1.5, J. Flores, Englemann, Las Cumbres & Mile 20 N\Drawings\Civil\15-C14-EXISTING TOPOGRAPHY & CONTROL DATA - MILE 20 NORTH ROAD.dwg LAYOUT NAME: Layout1 PLOTTED: Monday, November 07, 2016 - 2:38pm USER: Administrator

CONTROL POINT DATA				
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1	1/2" REBAR	16652527.71	1139386.95	68.30



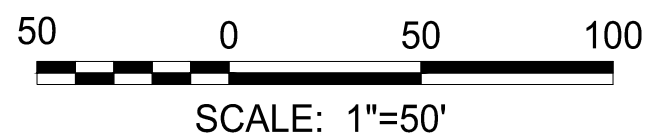
90% REVIEW SUBMITTAL



LEGEND	
—□—	= EXISTING GAS MARKER
—X—	= EXISTING CHAINLINK FENCE
—OH—	= EXISTING OVERHEAD ELECTRIC LINE
69.60 NG	= NATURAL GROUND
70.32 SE	= PAVEMENT SURFACE ELEVATION
⊕	= CONTROL POINT
⊗	= EXISTING GUY WIRE
⊠	= EXISTING TELEPHONE PEDESTAL
⊙	= EXISTING WATER METER
⊕	= EXISTING POWER POLE
○	= EXISTING IRRIGATION STANDPIPE

A EXISTING TOPOGRAPHY & CONTROL DATA

SCALE: 1"=50'



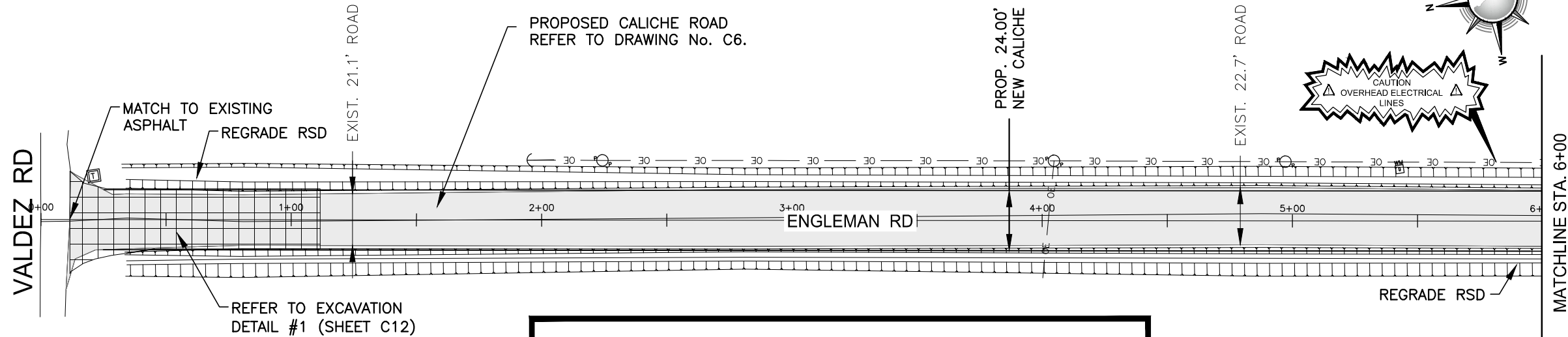
SURVEY DATUM

HORIZONTAL: NAD 83

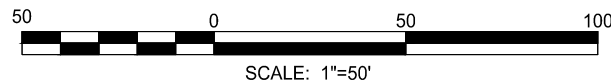
VERTICAL: NAVD 88

CONSULTANT'S SHEET	PROJECT NO. 16100-17		
THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF REVIEW UNDER THE AUTHORITY OF LUIS J. NAVA P.E. # 94121 ON 11/07/16 IT IS NOT TO BE USED FOR ANY OTHER PURPOSE.	IE	INTERNATIONAL CONSULTING ENGINEERS 1722 N. CLOSER BLVD., SUITE B ENID, OKLAHOMA 73644 PHONE: 580-323-5404 FAX: 580-323-5898 I.B.P.E. FIRM REGISTRATION #F-10837	
REVISION NO.	DATE	BY	DESCRIPTION
			HIDALGO COUNTY PRECINCT NO. 1
			1902 Joe Stephens Ave. Weslaco, TX 78596 Tel. (956) 968-8733 Fax. (956) 969-1417 A.C. CUELLAR, JR. County Commissioner PCT No. 1
			HIDALGO COUNTY PRECINCT No. 1 AREA ROAD DISTRESS MAINTENANCE
			EXISTING TOPOGRAPHY AND CONTROL DATA MILE 20 NORTH ROAD
			DRAWING NO.
			C14
			SHEET 15 of 33

FILE NAME: Z:\2016\Engineering\Hidalgo County\Precinct No.1\15. J. Flores, Engleman, Los Cumbres & Mile 20 N\Drawings\Civil\16-C15-PROPOSED IMPROVEMENT LAYOUT - ENGLEMAN ROAD.dwg LAYOUT NAME: 11 x 17 PLOTTED: Monday, November 07, 2016 - 2:38pm USER: Administrator



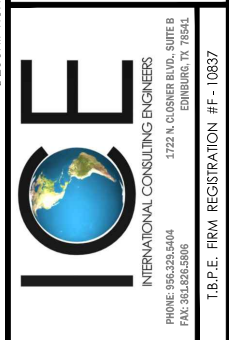
A ENGLEMAN ROAD IMPROVEMENTS
 C15 C15 SCALE: 1"=50'



90% REVIEW SUBMITTAL

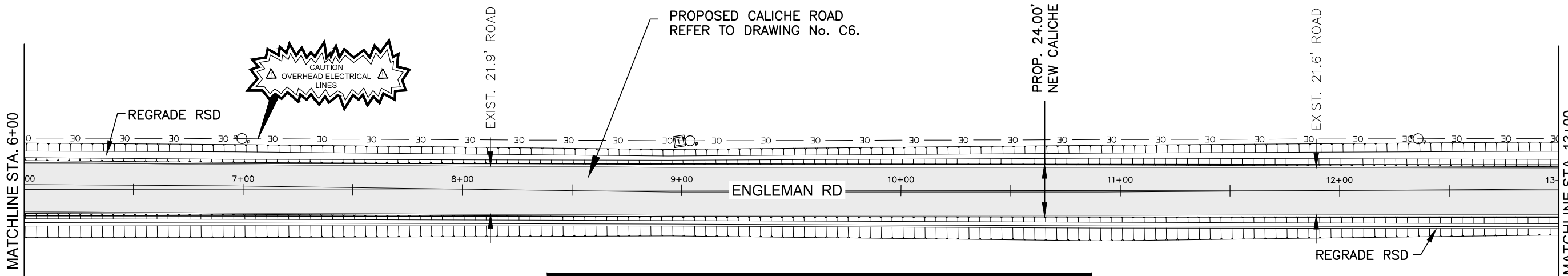
CONSULTANT'S SHEET
 PROJECT NO. 16100-17

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF REVIEW UNDER THE AUTHORITY OF LUIS J. NAVA
 P.E.# 94121 ON 11/07/16
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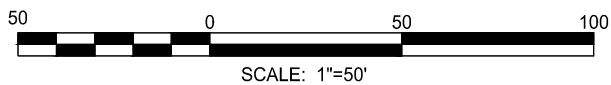


HIDALGO COUNTY
 PRECINCT NO. 1

1902 Joe Stephens Ave.
 Weslaco, TX 78596
 Tel. (956) 968-8733
 Fax. (956) 969-1417
 A.C. CUELLAR JR.
 County Commissioner PCT No. 1



B ENGLEMAN ROAD IMPROVEMENTS
 C15 C15 SCALE: 1"=50'



**** NOTICE TO CONTRACTOR**
**** TEXAS 811**

AS REQUIRED BY "THE TEXAS UNDERGROUND FACILITY DAMAGE PREVENTION AND SAFETY ACT" TEXAS811 SYSTEM MUST BE CONTACTED (811) AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION OPERATIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT TEXAS811.

HIDALGO COUNTY
 PRECINCT No. 1 AREA
 ROAD DISTRESS MAINTENANCE

ENGLEMAN ROAD IMPROVEMENTS

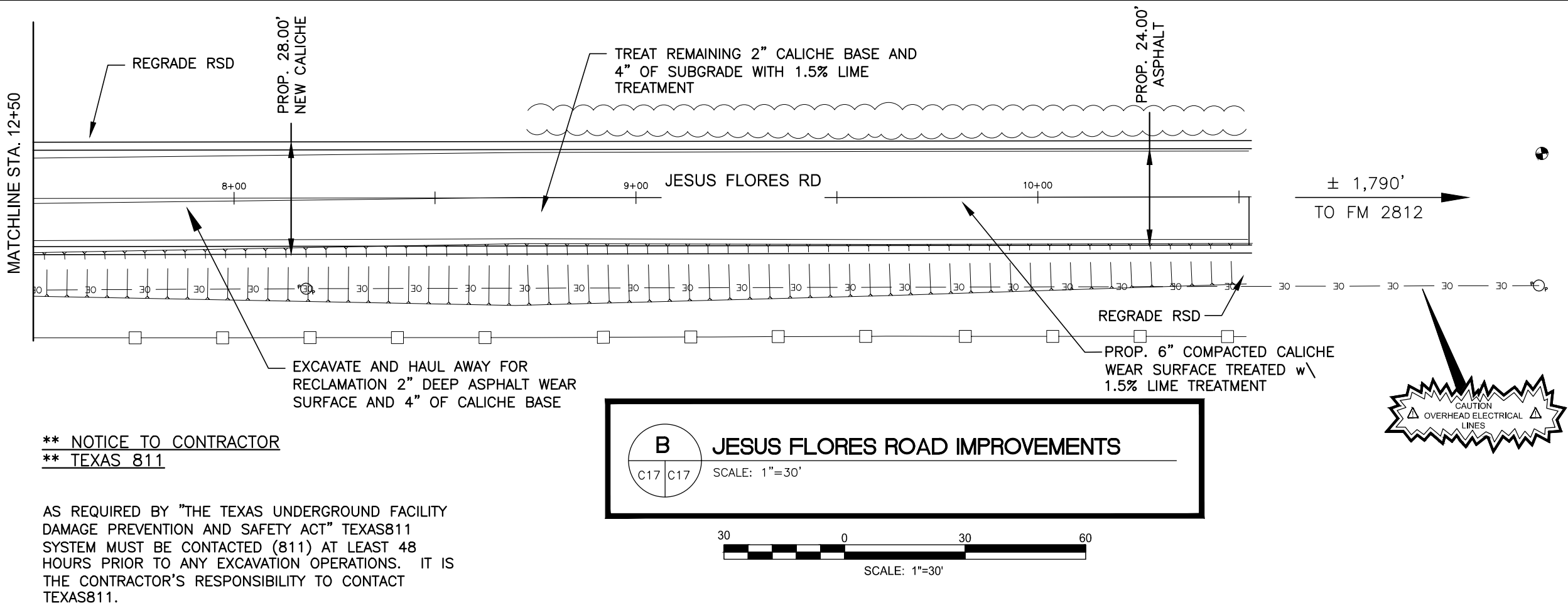
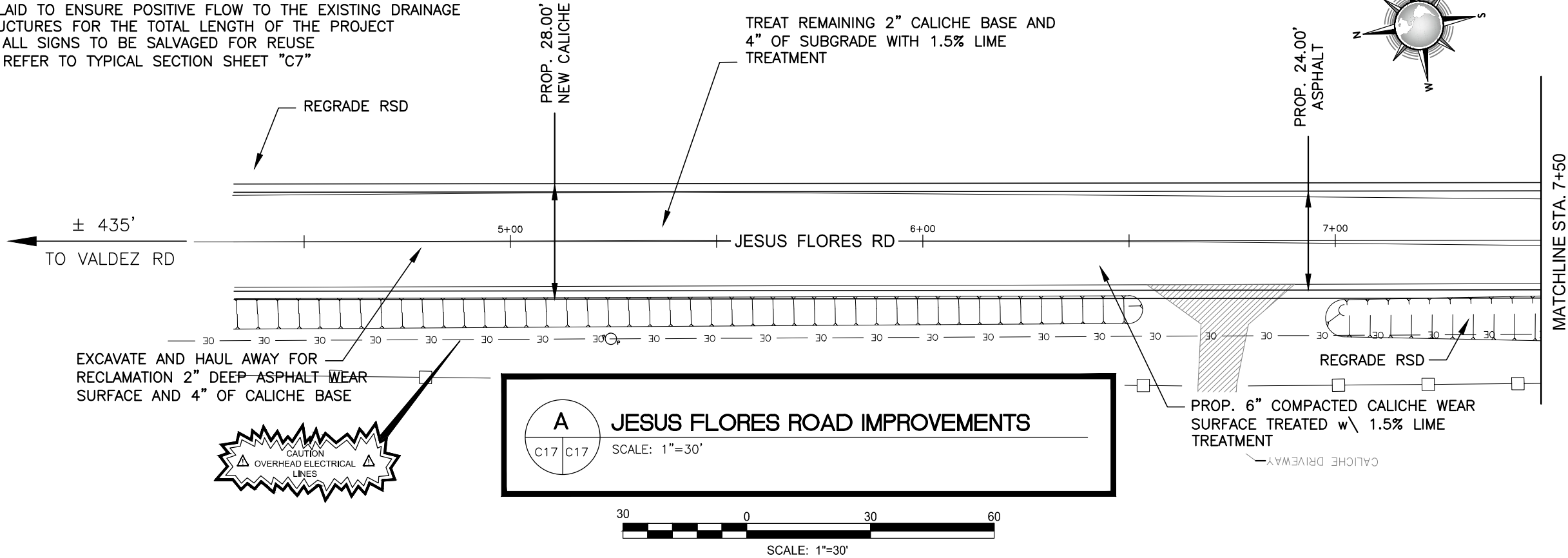
DRAWING NO.
C15

SHEET 16 of 33

FILE NAME: Z:\2016\Engineering\Hidalgo County\Precinct No.1\15 J. Flores, Engilman, Los Cumbres & Mile 20 N\Drawings\Civil\18-C17-PROPOSED IMPROVEMENT LAYOUT - J. FLORES ROAD.dwg LAYOUT NAME: 11 x 17 PLOTTED: Monday, November 07, 2016 - 2:39pm USER: Administrator

NOTES:

1. ALL DRIVEWAYS SHALL BE RECONSTRUCTED AND CULVERTS RE LAID TO ENSURE POSITIVE FLOW TO THE EXISTING DRAINAGE STRUCTURES FOR THE TOTAL LENGTH OF THE PROJECT
2. ALL SIGNS TO BE SALVAGED FOR REUSE
3. REFER TO TYPICAL SECTION SHEET "C7"



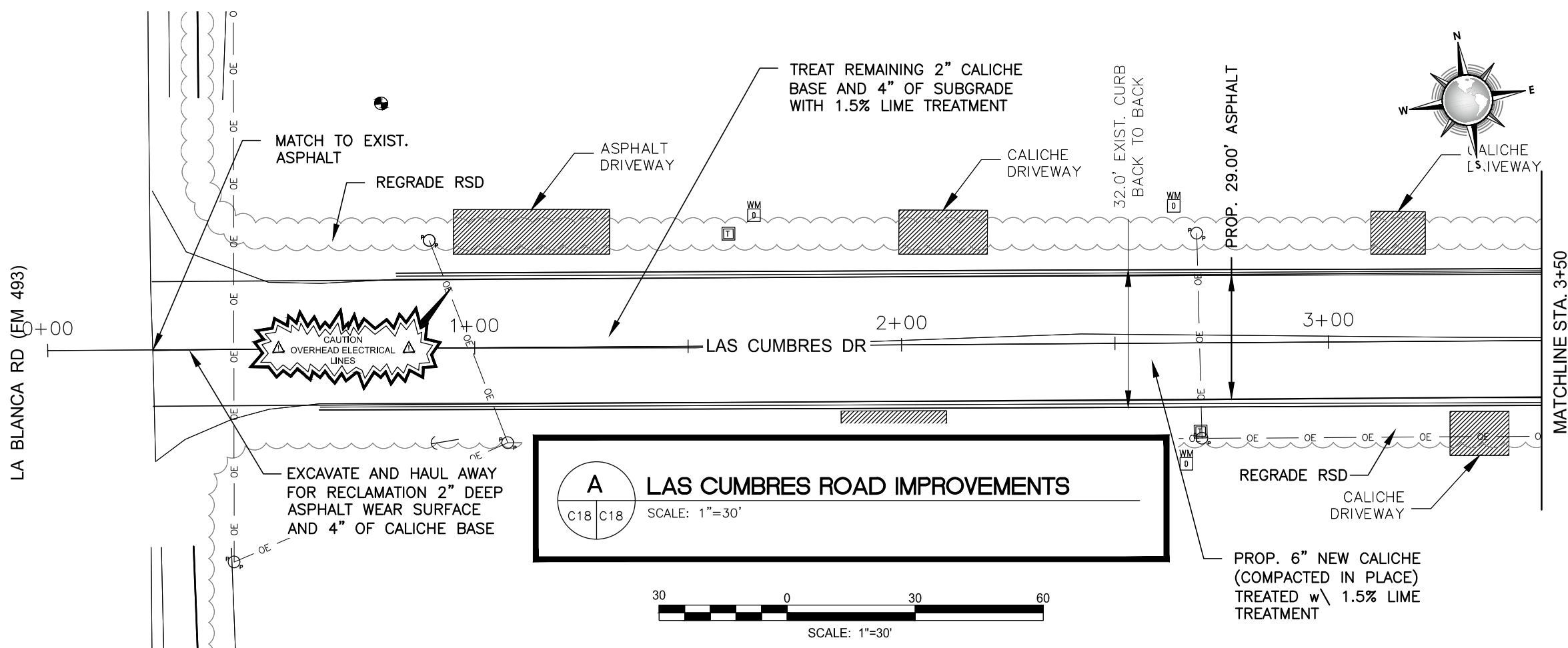
**** NOTICE TO CONTRACTOR**
**** TEXAS 811**

AS REQUIRED BY "THE TEXAS UNDERGROUND FACILITY DAMAGE PREVENTION AND SAFETY ACT" TEXAS811 SYSTEM MUST BE CONTACTED (811) AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION OPERATIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT TEXAS811.

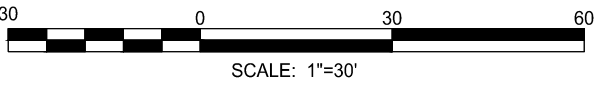
90% REVIEW SUBMITTAL

CONSULTANT'S SHEET PROJECT NO. 16100-17	
THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF REVIEW UNDER THE AUTHORITY OF LUIS J. NAVA P.E.# 94121 ON 11/07/16 IT IS NOT TO BE USED FOR ANY OTHER PURPOSE.	
 INTERNATIONAL CONSULTING ENGINEERS 1722 N. CLOSER BLVD., SUITE B ENID, OKLA. 73604 PHONE: 956.323.5404 FAX: 381.826.5896 I.C.E. REGISTRATION #F-10837	
REVISION NO.	DESCRIPTION
DATE	BY
HIDALGO COUNTY PRECINCT NO. 1	1902 Joe Stephens Ave. Weslaco, TX 78596 Tel. (956) 968-8733 Fax. (956) 969-1417 A.C. CUELLAR JR. County Commissioner PCT No. 1
 HIDALGO COUNTY PRECINCT NO. 1 AREA ROAD DISTRESS MAINTENANCE JESUS FLORES ROAD IMPROVEMENTS FROM STA. 00+00 TO END	
REVISION NO.	DRAWING NO.
C17	C17
SHEET 18	of 33

FILE NAME: Z:\2016\Engineering\Hidalgo County\Precinct No.1\Mile 1.5, J. Flores, Engineman, Las Cumbres & Mile 2.0\Drawings\Civil\19-C18-PROPOSED IMPROVEMENT LAYOUT - LAS CUMBRES ROAD.dwg LAYOUT NAME: 11 X 17 PLOTTED: Monday, November 07, 2016 - 2:39pm USER: Administrator



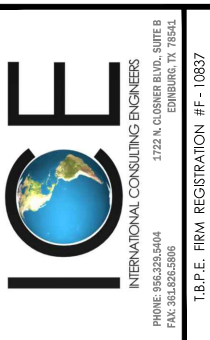
A LAS CUMBRES ROAD IMPROVEMENTS
 C18 C18 SCALE: 1"=30'



90% REVIEW SUBMITTAL

CONSULTANT'S SHEET
 PROJECT NO. 16100-17

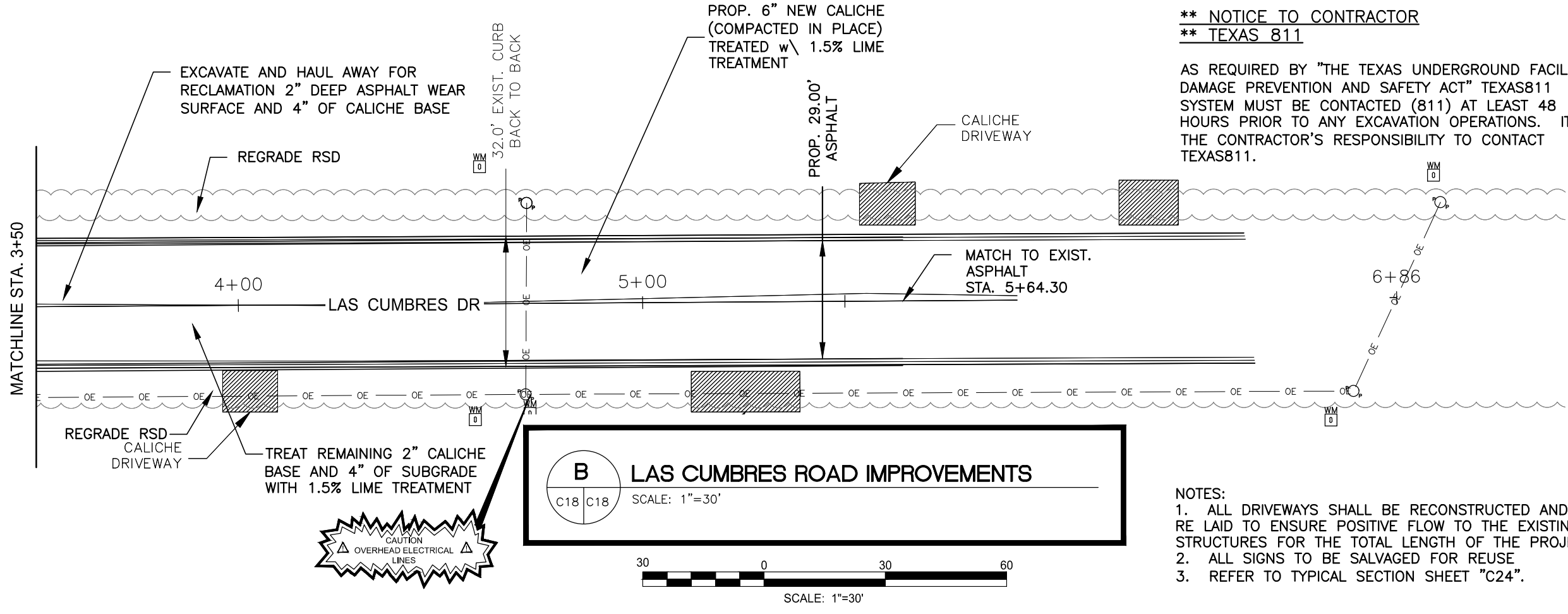
THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF REVIEW UNDER THE AUTHORITY OF LUIS J. NAVA
 P.E.# 94121 ON 11/07/16
 IT IS NOT TO BE USED FOR ANY OTHER PURPOSE.



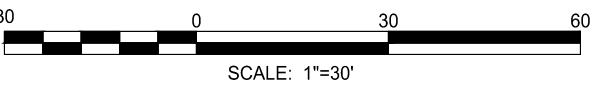
HIDALGO COUNTY
 PRECINCT NO. 1
 1902 Joe Stephens Ave.
 Weslaco, TX 78596
 Tel. (956) 968-8733
 Fax. (956) 969-1417
 A.C. CUELLAR, JR.
 County Commissioner PCT No. 1



HIDALGO COUNTY
 PRECINCT No. 1 AREA
 ROAD DISTRESS MAINTENANCE
 LAS CUMBRES ROAD IMPROVEMENTS
 FROM STA. 0+00 TO END



B LAS CUMBRES ROAD IMPROVEMENTS
 C18 C18 SCALE: 1"=30'



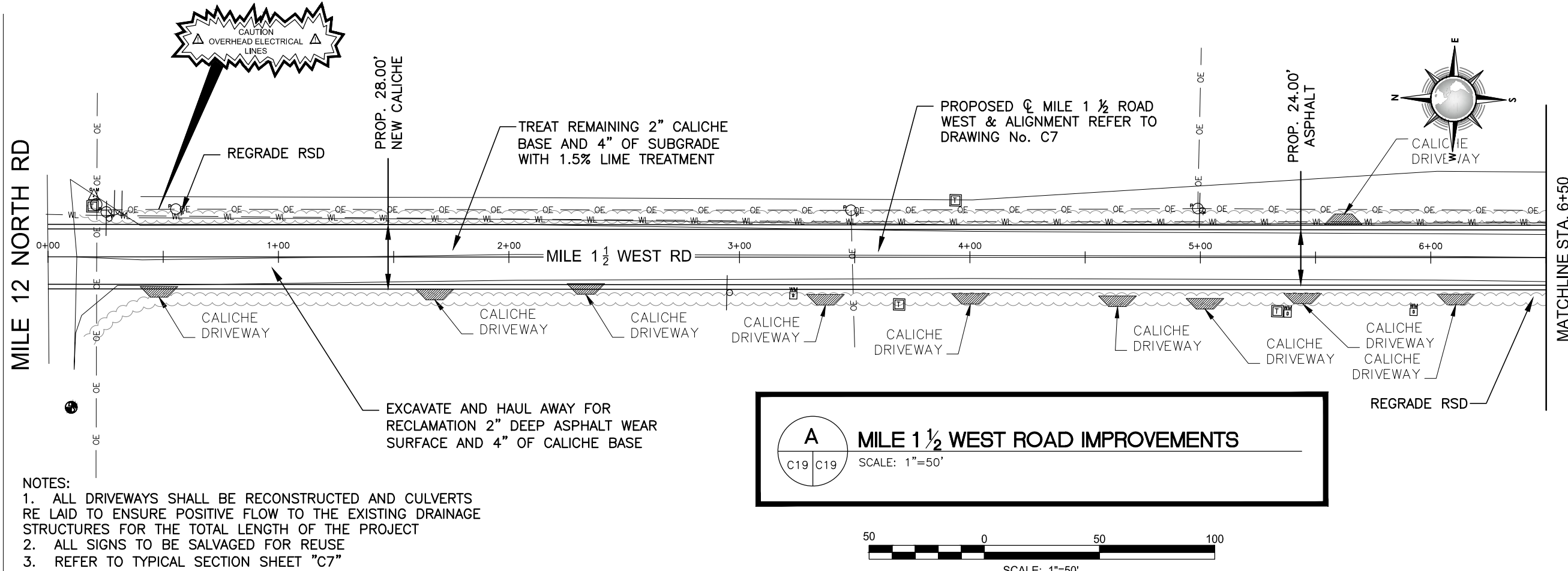
**** NOTICE TO CONTRACTOR
 ** TEXAS 811**

AS REQUIRED BY "THE TEXAS UNDERGROUND FACILITY DAMAGE PREVENTION AND SAFETY ACT" TEXAS811 SYSTEM MUST BE CONTACTED (811) AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION OPERATIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT TEXAS811.

- NOTES:
 1. ALL DRIVEWAYS SHALL BE RECONSTRUCTED AND CULVERTS RE LAID TO ENSURE POSITIVE FLOW TO THE EXISTING DRAINAGE STRUCTURES FOR THE TOTAL LENGTH OF THE PROJECT
 2. ALL SIGNS TO BE SALVAGED FOR REUSE
 3. REFER TO TYPICAL SECTION SHEET "C24".

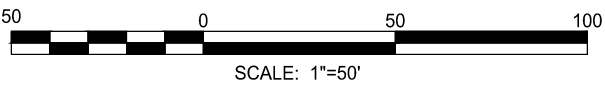
REVISION NO. DATE BY DESCRIPTION
 DRAWING NO.
C18
 SHEET 19 of 33

FILE NAME: Z:\2016\Engineering\Hidalgo County\Precinct No. 1\Mile 1.5, J. Flores, Englemen, Los Cumbres & Mile 20 (N\Drawings\Civil\20-C19-PROPOSED IMPROVEMENT LAYOUT - MILE 1.5 WEST ROAD.dwg LAYOUT NAME: 11X17 - PLOTTED: Monday, November 07, 2016 - 2:39pm USER: Administrator

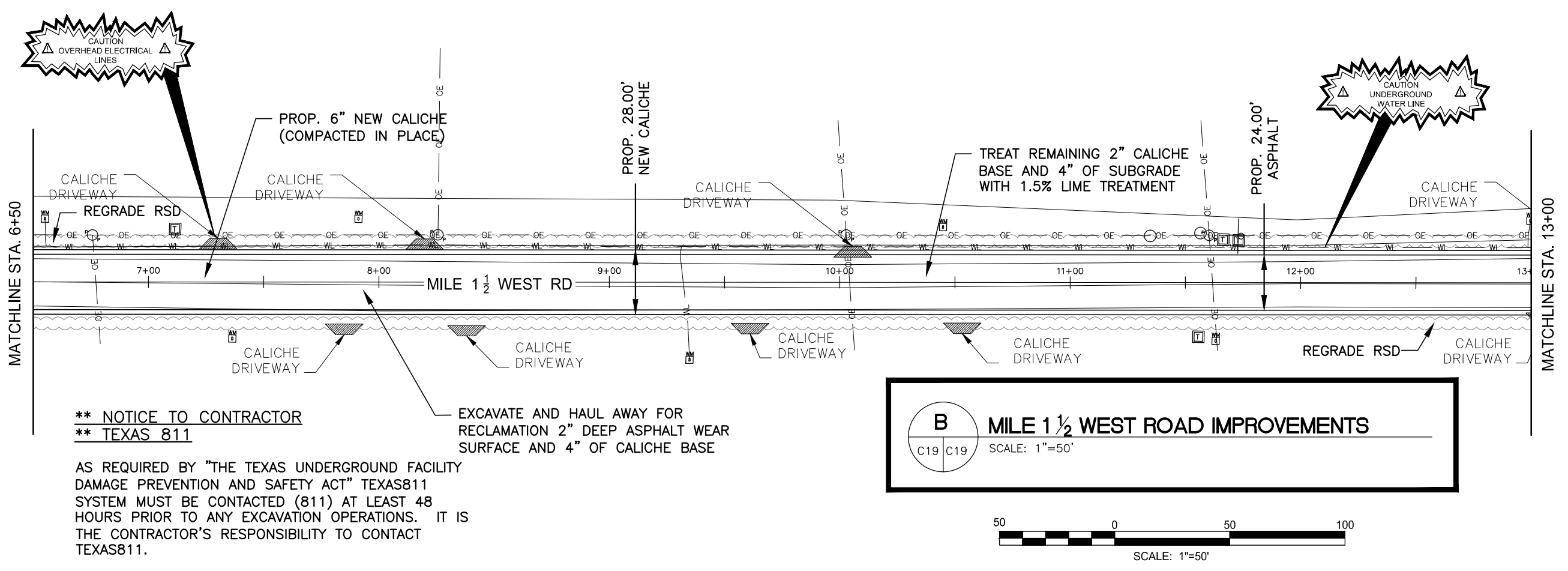


NOTES:
 1. ALL DRIVEWAYS SHALL BE RECONSTRUCTED AND CULVERTS RE LAID TO ENSURE POSITIVE FLOW TO THE EXISTING DRAINAGE STRUCTURES FOR THE TOTAL LENGTH OF THE PROJECT
 2. ALL SIGNS TO BE SALVAGED FOR REUSE
 3. REFER TO TYPICAL SECTION SHEET "C7"

A MILE 1 1/2 WEST ROAD IMPROVEMENTS
 C19 C19 SCALE: 1"=50'

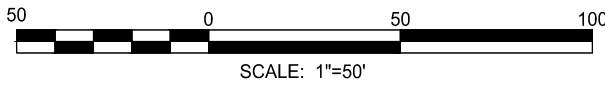


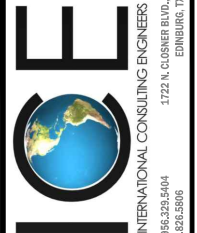


90% REVIEW SUBMITTAL



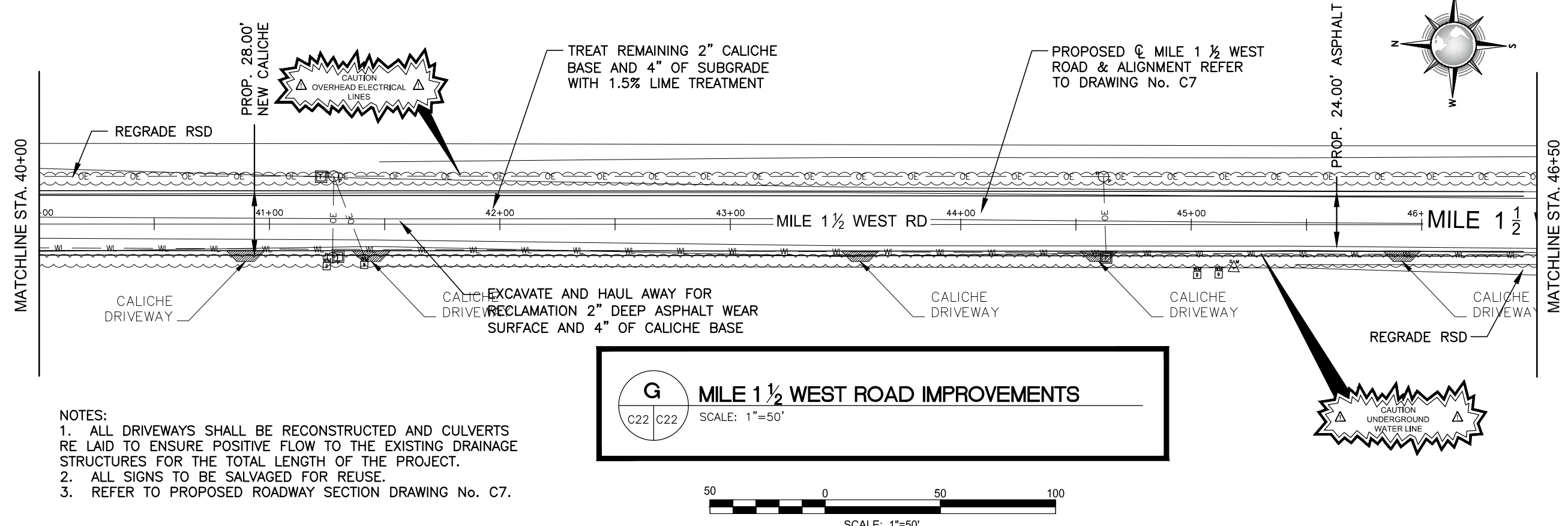
**** NOTICE TO CONTRACTOR**
**** TEXAS 811**
 AS REQUIRED BY "THE TEXAS UNDERGROUND FACILITY DAMAGE PREVENTION AND SAFETY ACT" TEXAS811 SYSTEM MUST BE CONTACTED (811) AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION OPERATIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT TEXAS811.

B MILE 1 1/2 WEST ROAD IMPROVEMENTS
 C19 C19 SCALE: 1"=50'



CONSULTANT'S SHEET PROJECT NO. 16100-17	
THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF REVIEW UNDER THE AUTHORITY OF LUIS J. NAVA P.E.# 94121 ON 11/07/16 IT IS NOT TO BE USED FOR ANY OTHER PURPOSE.	
 INTERNATIONAL CONSULTING ENGINEERS PHONE: 986.329.5404 FAX: 986.329.5386 1722 N. CUSHNER BLVD., SUITE B ENRIQUE, TX 78845 T.I.P.E. FIRM REGISTRATION #F- 10837	
REVISION NO.	DESCRIPTION
BY	
DATE	
HIDALGO COUNTY PRECINCT NO. 1 1902 Joe Stephens Ave. Weslaco, TX 78596 Tel. (956) 968-8733 Fax. (956) 969-1417 A.C. CUELLAR JR. County Commissioner PCT No. 1	
 	
HIDALGO COUNTY PRECINCT NO. 1 AREA ROAD DISTRESS MAINTENANCE MILE 1 1/2 WEST ROAD IMPROVEMENTS FROM STA. 0+00 TO STA. 6+00	
REVISION NO.	DRAWING NO.
	C19
BY	
DATE	
SHEET 20 of 33	

FILE NAME: Z:\2016\Engineering\Hidalgo County\Precinct No. 1\Mile 1.5, J. Flores, Englemen, Los Cumbres & Mile 20 (N\Drawings\Civil\23-C22-PROPOSED IMPROVEMENT LAYOUT - MILE 1.5 WEST ROAD.dwg LAYOUT NAME: 11X17 PLOTTED: Monday, November 07, 2016 - 2:49pm USER: Administrator



90% REVIEW SUBMITTAL

- NOTES:
1. ALL DRIVEWAYS SHALL BE RECONSTRUCTED AND CULVERTS RE LAID TO ENSURE POSITIVE FLOW TO THE EXISTING DRAINAGE STRUCTURES FOR THE TOTAL LENGTH OF THE PROJECT.
 2. ALL SIGNS TO BE SALVAGED FOR REUSE.
 3. REFER TO PROPOSED ROADWAY SECTION DRAWING No. C7.

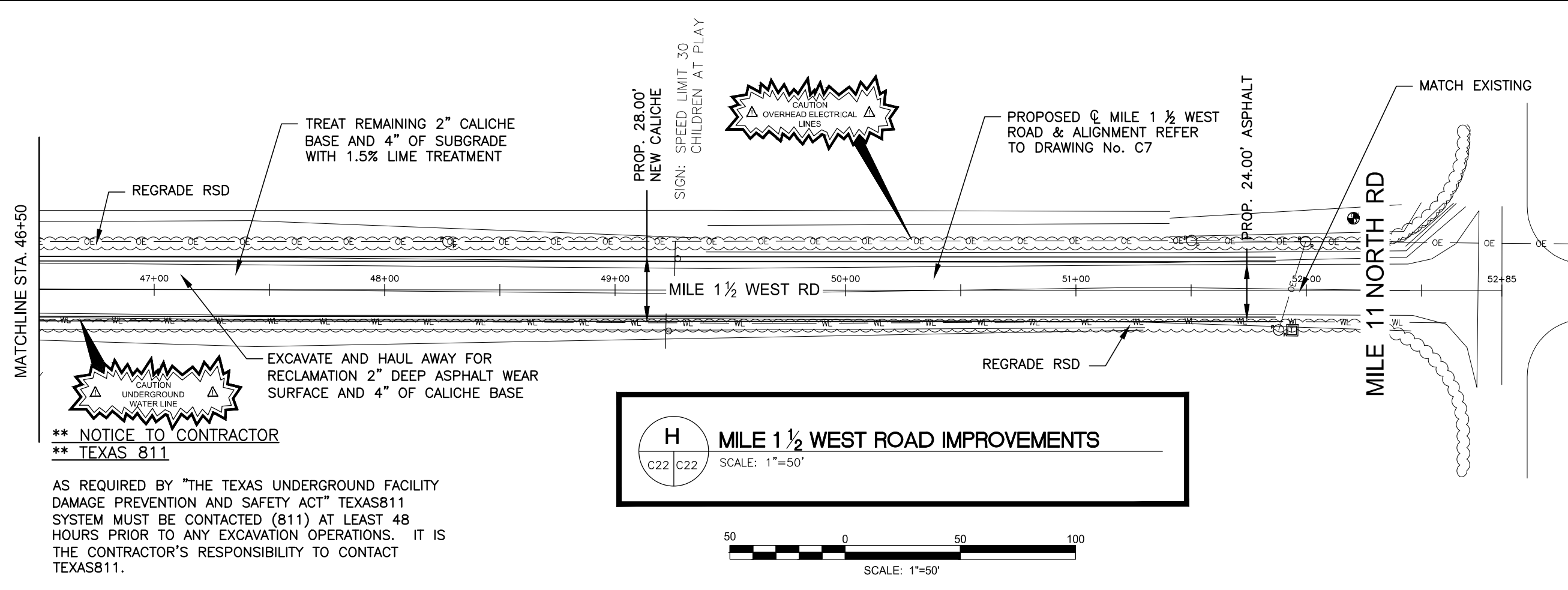
CONSULTANT'S SHEET
PROJECT NO. 16100-17

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF REVIEW UNDER THE AUTHORITY OF LUIS J. NAVA
P.E.# 94121
ON 11/07/16
IT IS NOT TO BE USED FOR ANY OTHER PURPOSE.

INTERNATIONAL CONSULTING ENGINEERS
PHONE: 986.329.5404
FAC: 361.626.8386
1722 N. CUSHNER BLVD., SUITE B
EMMERTON, TX 75847
I.C.E. FIRM REGISTRATION #F- 10837

HIDALGO COUNTY
PRECINCT NO. 1

1902 Joe Stephens Ave.
Weslaco, TX 78596
Tel. (956) 968-8733
Fax. (956) 969-1417
A.C. CUELLAR JR.
County Commissioner PCT No. 1



** NOTICE TO CONTRACTOR
** TEXAS 811

AS REQUIRED BY "THE TEXAS UNDERGROUND FACILITY DAMAGE PREVENTION AND SAFETY ACT" TEXAS811 SYSTEM MUST BE CONTACTED (811) AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION OPERATIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT TEXAS811.

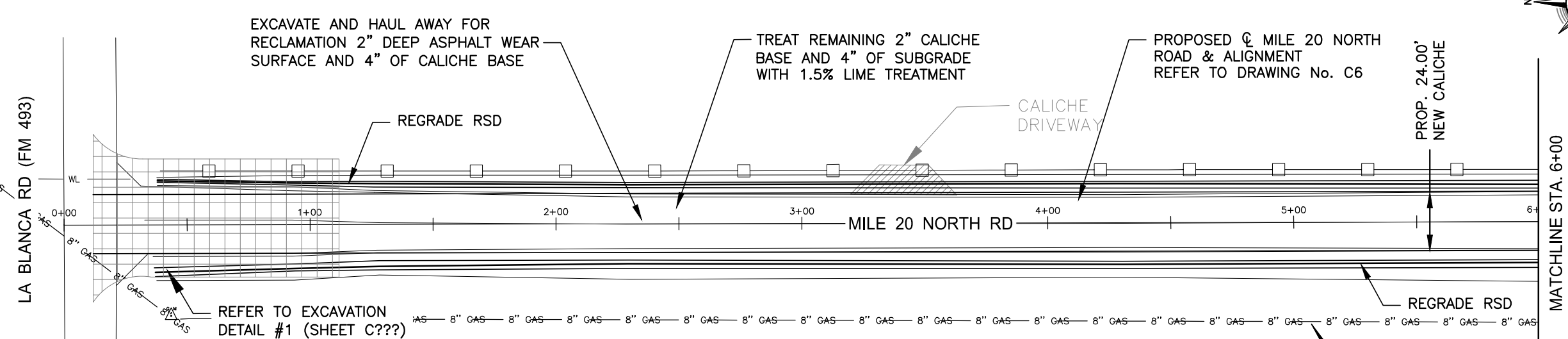
HIDALGO COUNTY
PRECINCT NO. 1 AREA
ROAD DISTRESS MAINTENANCE

MILE 1 1/2 WEST ROAD IMPROVEMENTS
FROM STA. 40+00 TO END

DRAWING NO.
C22

SHEET 23 of 33

FILE NAME: Z:\2016\Engineering\Hidalgo County\Precinct No. 1\Mile 1.5 - J. Flores, Englemen, Los Cumbres & Mile 20 (Drawings\Civil\C23-PROPOSED IMPROVEMENT LAYOUT - MILE 20 NORTH ROAD.dwg LAYOUT NAME: 11 X 17 PLOTTED: Monday, November 07, 2016 - 2:40pm USER: Administrator

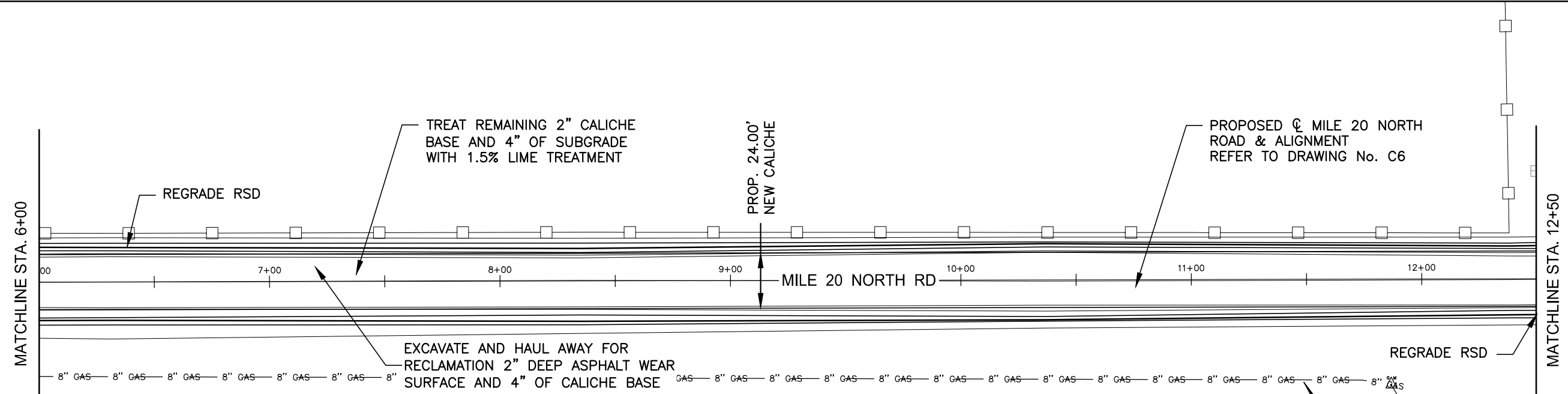
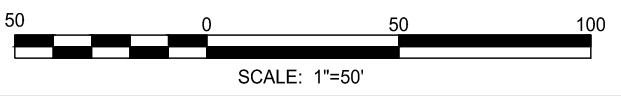


90% REVIEW SUBMITTAL

- NOTES:**
1. ALL DRIVEWAYS SHALL BE RECONSTRUCTED AND CULVERTS RE LAID TO ENSURE POSITIVE FLOW TO THE EXISTING DRAINAGE STRUCTURES FOR THE TOTAL LENGTH OF THE PROJECT.
 2. ALL SIGNS TO BE SALVAGED FOR REUSE.
 3. REFER TO PROPOSED ROADWAY SECTION DRAWING No. C6.

A MILE 20 NORTH ROAD IMPROVEMENTS

C23 | C23 SCALE: 1"=50'

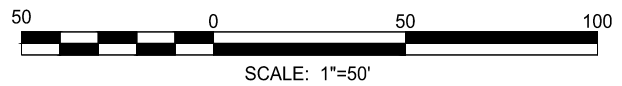


**** NOTICE TO CONTRACTOR**
**** TEXAS 811**

AS REQUIRED BY "THE TEXAS UNDERGROUND FACILITY DAMAGE PREVENTION AND SAFETY ACT" TEXAS811 SYSTEM MUST BE CONTACTED (811) AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION OPERATIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT TEXAS811.

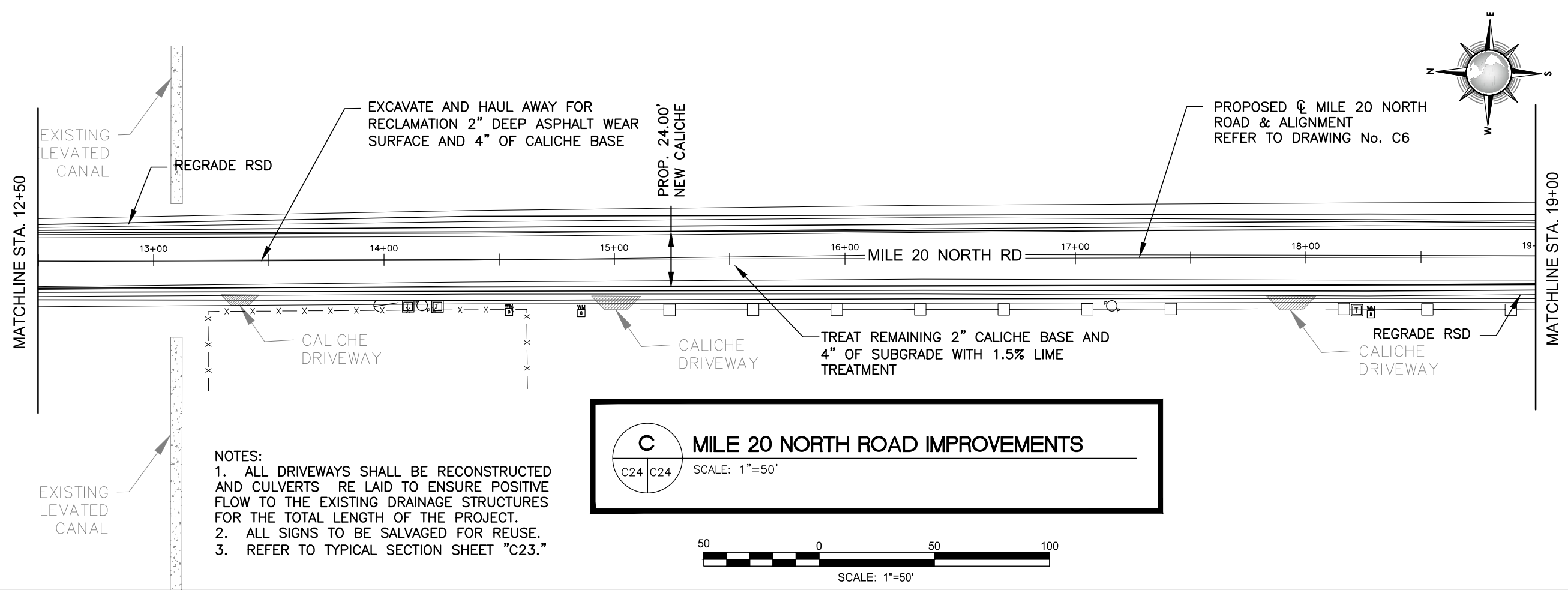
B MILE 20 NORTH ROAD IMPROVEMENTS

C23 | C23 SCALE: 1"=50'



CONSULTANT'S SHEET	PROJECT NO. 16100-17
DESCRIPTION	<p>THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF REVIEW UNDER THE AUTHORITY OF LUIS J. NAVA P.E. # 94121 ON 11/07/16 IT IS NOT TO BE USED FOR ANY OTHER PURPOSE.</p>
REVISION NO.	<p>IE</p> <p>INTERNATIONAL ENGINEERS INTERNATIONAL CONSULTING ENGINEERS PHONE: 986.329.5404 FAX: 986.329.5386 1722 N. CUSHNER BLVD., SUITE B ENRIQUE, TX 78845 I.B.P.E. FIRM REGISTRATION #F-10837</p>
BY	<p>HIDALGO COUNTY PRECINCT NO. 1</p> <p>1902 Joe Stephens Ave. Weslaco, TX 78596 Tel. (956) 968-8733 Fax. (956) 969-1417 A.C. CUELLAR JR. County Commissioner PCT No. 1</p>
DATE	<p>FEMA</p> <p>Hidalgo County Precinct 1</p>
DESCRIPTION	<p>HIDALGO COUNTY PRECINCT NO. 1 AREA ROAD DISTRESS MAINTENANCE</p> <p>MILE 20 NORTH ROAD IMPROVEMENTS FROM STA. 0+00 TO STA. 12+50</p>
REVISION NO.	DRAWING NO.
DATE	C23
BY	SHEET 24 of 33

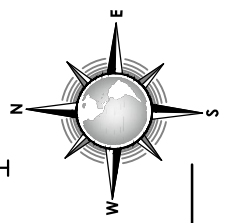
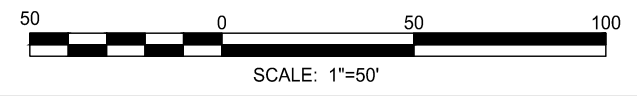
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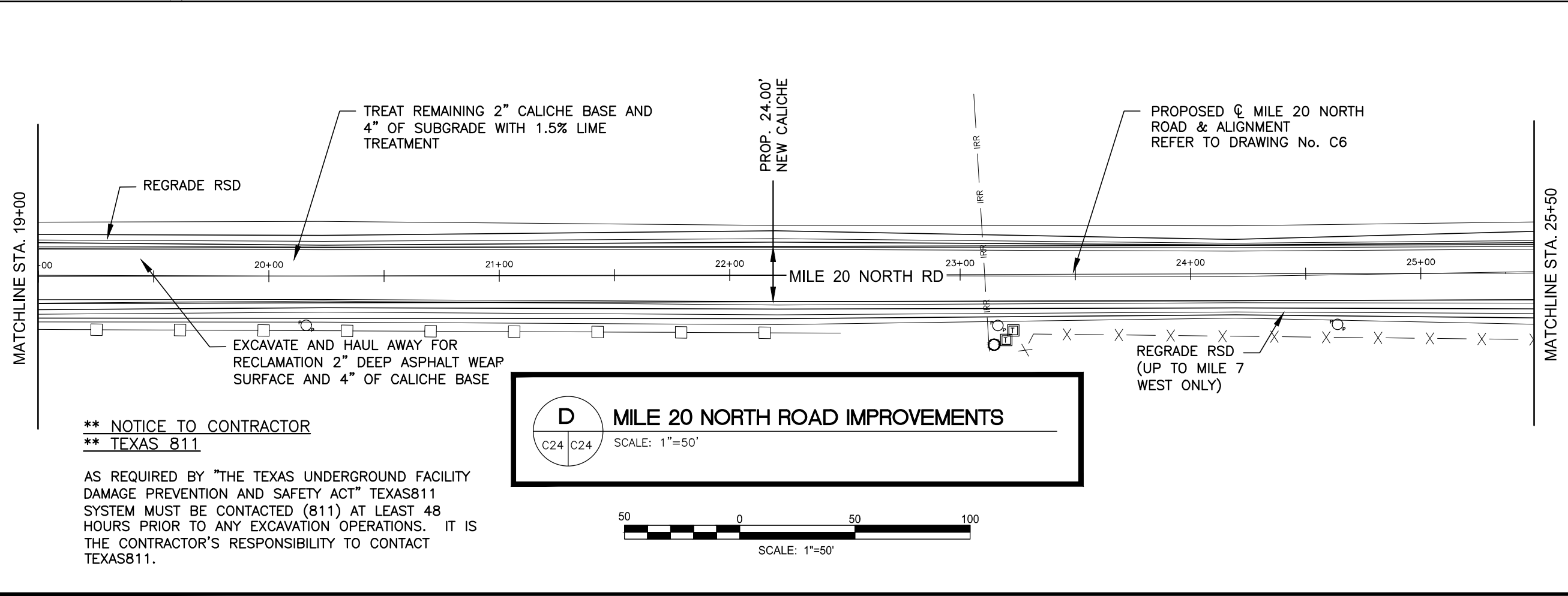
- NOTES:**
1. ALL DRIVEWAYS SHALL BE RECONSTRUCTED AND CULVERTS RE LAID TO ENSURE POSITIVE FLOW TO THE EXISTING DRAINAGE STRUCTURES FOR THE TOTAL LENGTH OF THE PROJECT.
 2. ALL SIGNS TO BE SALVAGED FOR REUSE.
 3. REFER TO TYPICAL SECTION SHEET "C23."

C MILE 20 NORTH ROAD IMPROVEMENTS

C24 C24 SCALE: 1"=50'



90% REVIEW SUBMITTAL

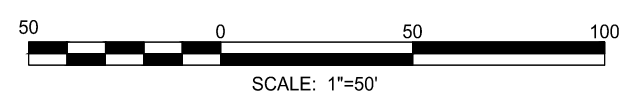


**** NOTICE TO CONTRACTOR**
**** TEXAS 811**

AS REQUIRED BY "THE TEXAS UNDERGROUND FACILITY DAMAGE PREVENTION AND SAFETY ACT" TEXAS811 SYSTEM MUST BE CONTACTED (811) AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION OPERATIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT TEXAS811.

D MILE 20 NORTH ROAD IMPROVEMENTS

C24 C24 SCALE: 1"=50'



	REVISION NO.	DATE	BY	DESCRIPTION
				HIDALGO COUNTY PRECINCT NO. 1 ROAD DISTRESS MAINTENANCE
				MILE 20 NORTH ROAD IMPROVEMENTS FROM STA. 12+50 TO STA. 25+50
				DRAWING NO. C24
				SHEET 25 of 33

CONSULTANT'S SHEET
PROJECT NO. 16100-17

THIS DOCUMENT IS
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UNDER THE AUTHORITY
OF
LUIS J. NAVA
P.E.# 94121
ON 11/07/16
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PURPOSE.

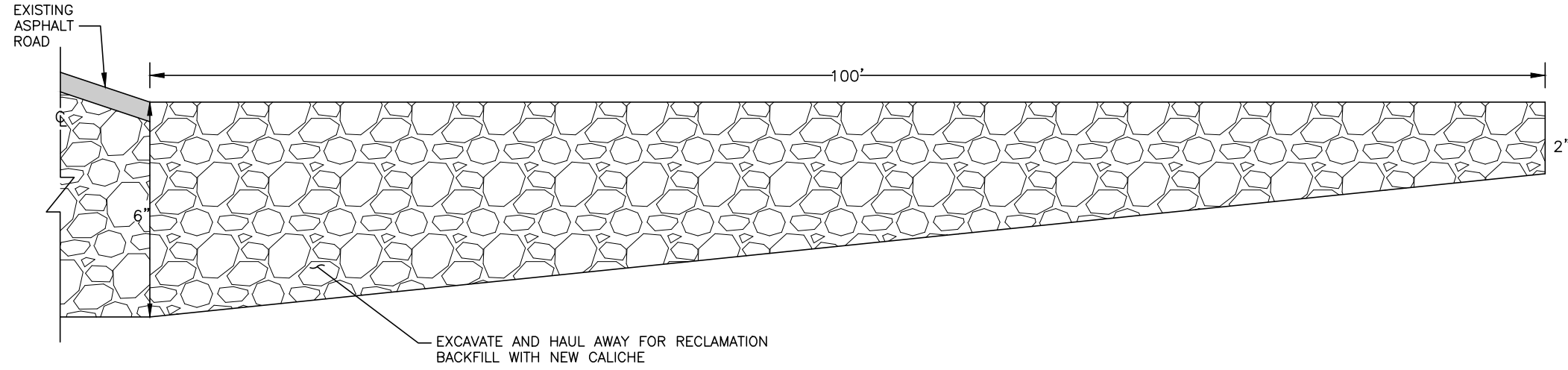
INTERNATIONAL CONSULTING ENGINEERS
PHONE: 956.329.5404
FAX: 956.329.5386
1722 N. CUSHNER BLVD., SUITE B
EMBUERLE, TX 78841
T.I.P.E. FIRM REGISTRATION #F-10837

HIDALGO COUNTY
PRECINCT NO. 1

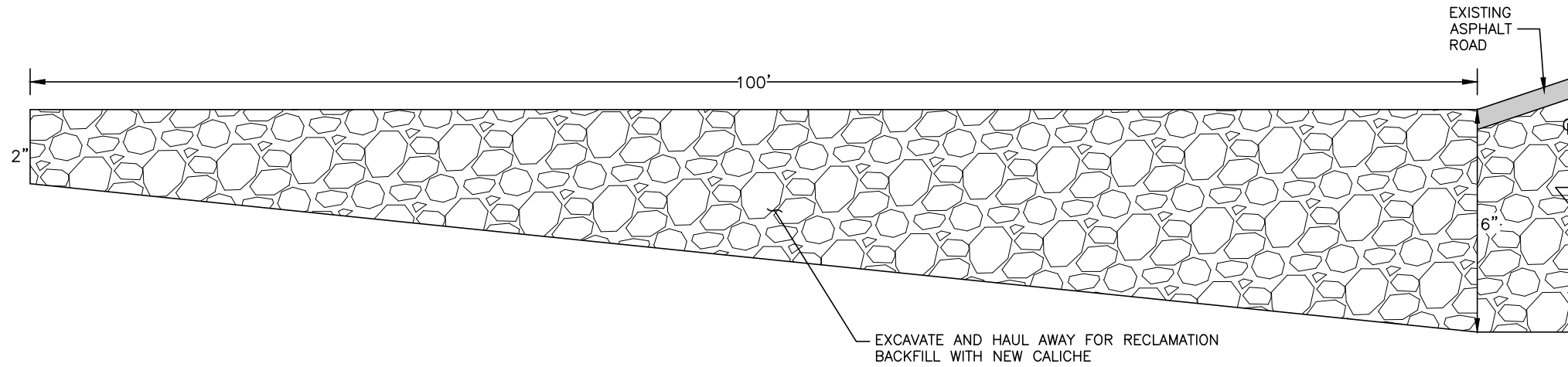
1902 Joe Stephens Ave.
Weslaco, TX 78596
Tel. (956) 966-8733
Fax. (956) 969-1417
A.C. CUELLAR JR.
County Commissioner PCT No. 1



FILE NAME: Z:\2016\Engineering\Hidalgo County\Precinct No.1\Mile 1.5, J. Flores, Engineman, Las Cumbres & Mile 20 N\Drawings\Civil\27-C26-EXCAVATION DETAILS.dwg LAYOUT NAME: Layout1 PLOTTED: Monday, November 07, 2016 - 2:41pm USER: Administrator



EXCAVATION DETAIL #1
N.T.S.



EXCAVATION DETAIL #2
N.T.S.

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REVISION NO.	DATE	BY	DESCRIPTION
			HIDALGO COUNTY PRECINCT NO. 1 AREA ROAD DISTRESS MAINTENANCE
			EXCAVATION DETAILS
			DRAWING NO. C26
			SHEET 27 of 33

CONSULTANT'S SHEET
PROJECT NO. 16100-17

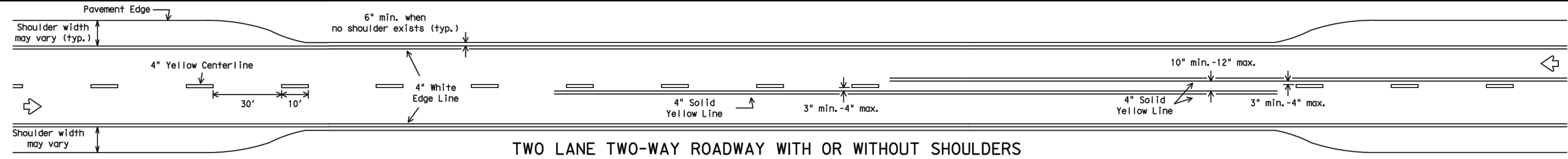
THIS DOCUMENT IS
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1722 N. CLOSER BLVD., SUITE B
EMBUURG, TX 78541
PHONE: 956-323-5404
FAX: 956-323-5896
I.B.P.E. FIRM REGISTRATION #F-10837

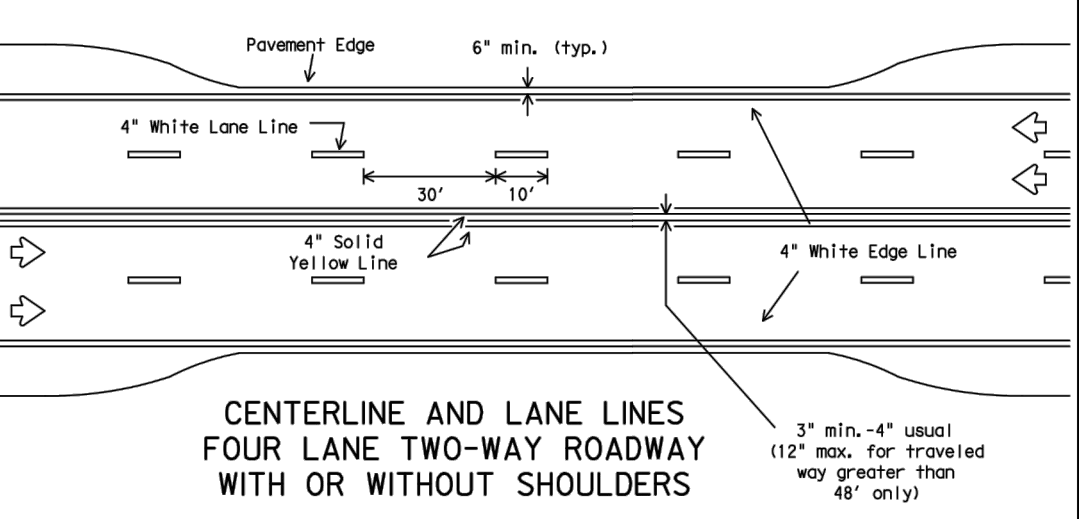
HIDALGO COUNTY
PRECINCT NO. 1
1902 Joe Stephens Ave.
Weslaco, TX 78596
Tel. (956) 968-8733
Fax. (956) 969-1417
A.C. CUELLAR JR.
County Commissioner PCT No. 1



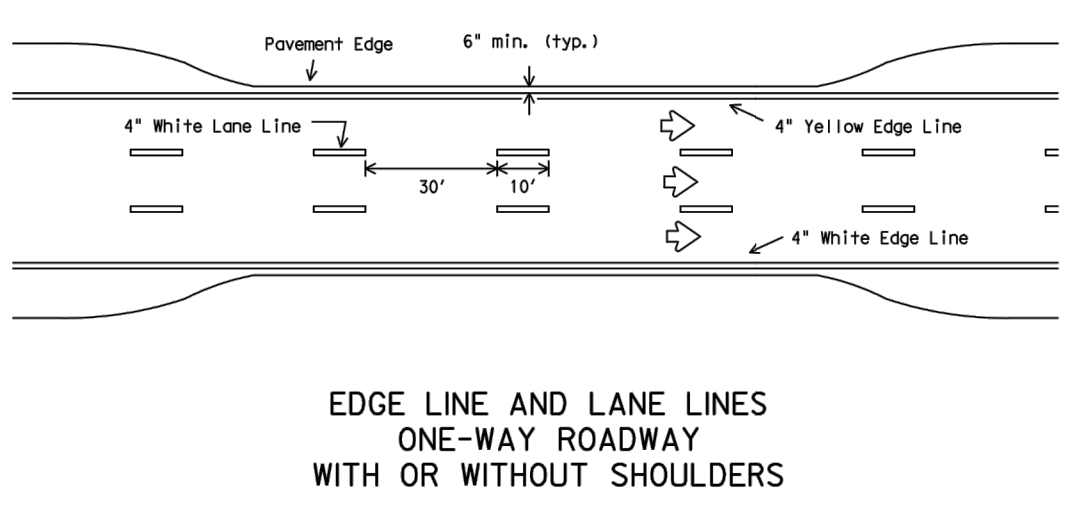
The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the consequences of any use of this standard for other formats or for incorrect results or damages resulting from its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



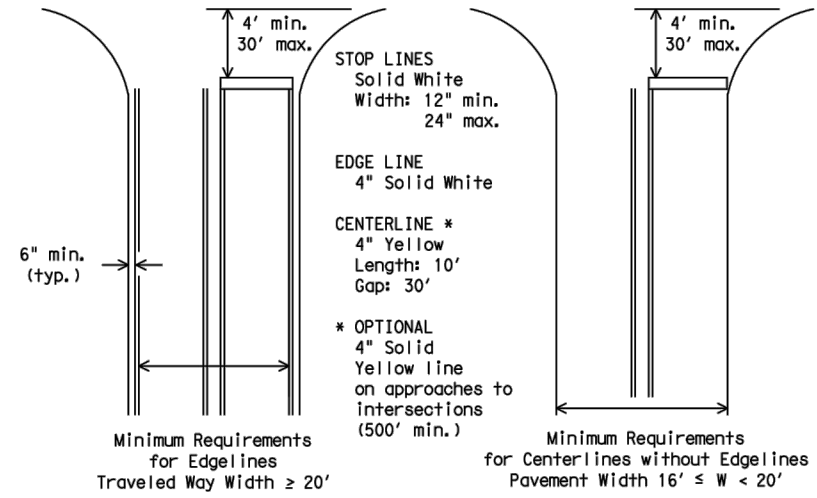
TWO LANE TWO-WAY ROADWAY WITH OR WITHOUT SHOULDERS



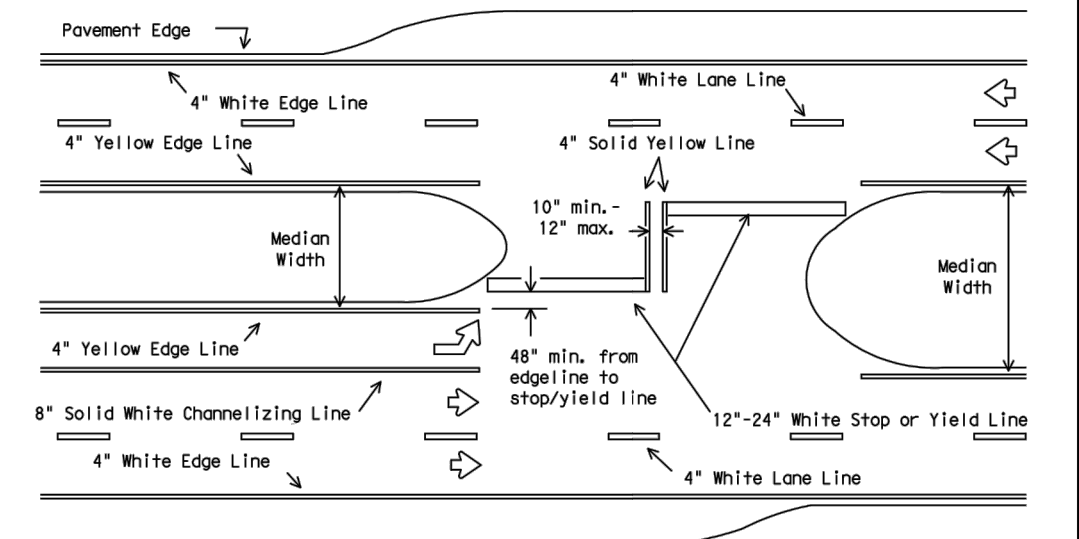
**CENTERLINE AND LANE LINES
FOUR LANE TWO-WAY ROADWAY
WITH OR WITHOUT SHOULDERS**



**EDGE LINE AND LANE LINES
ONE-WAY ROADWAY
WITH OR WITHOUT SHOULDERS**

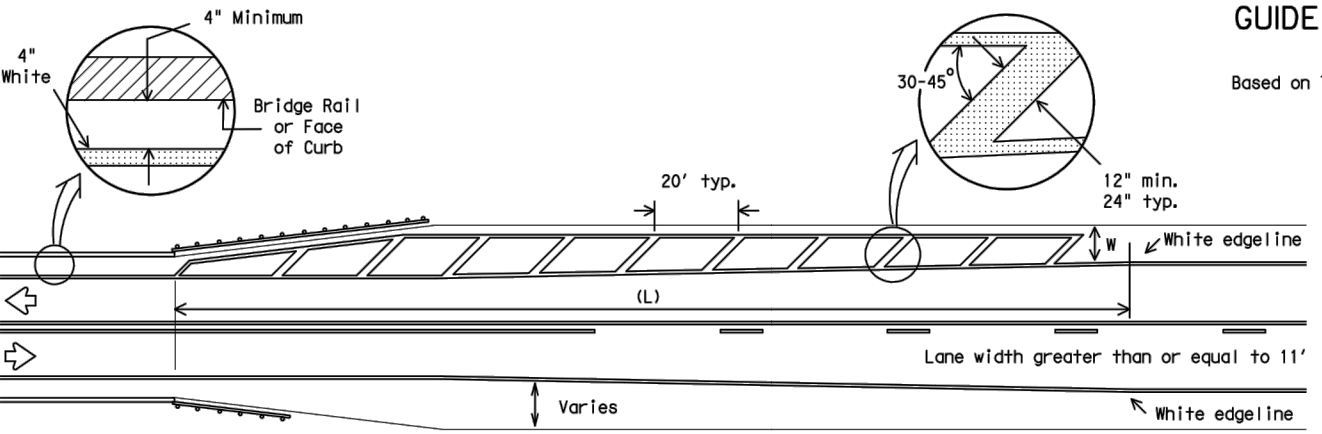


**GUIDE FOR PLACEMENT OF STOP LINES,
EDGE LINE & CENTERLINE**
Based on Traveled Way and Pavement Widths for Undivided Highways



FOUR LANE DIVIDED ROADWAY INTERSECTIONS

All medians shall be field measured to determine the location of necessary striping. Stop/Yield bars and centerlines shall be placed when the median width is greater than 30 ft. The median width is defined as the area between two roadways of a divided highway measured from edge of traveled way to edge of traveled way. The median excludes turn lanes. The median width might be different between intersections, interchanges and of opposite approaches of the same intersection. The narrow median width will be the controlling width to determine if markings are required.



**ROADWAYS WITH REDUCED SHOULDER
WIDTHS ACROSS BRIDGE OR CULVERT**

- NOTES:
- No-passing zone on bridge approach is optional but if used, it shall be a minimum 500 feet long.
 - For crosshatching length (L) see Table 1.
 - The width of the offset (W) and the required crosshatching width is the full shoulder width in advance of the bridge.
 - The crosshatching is not required if delineators or barrier reflectors are used along the structure.
 - For guard fence details, refer elsewhere in the plans.

TABLE 1 - TYPICAL LENGTH (L)

Posted Speed *	Formula
≤ 40	$L = \frac{WS^2}{60}$
≥ 45	$L = WS$

* 85th Percentile Speed may be used on roads where traffic speeds normally exceed the posted speed limit. Crosshatching length should be rounded up to nearest 5 foot increment.
L=Length of Crosshatching (FT.) W=Width of Offset (FT.) S=Posted Speed (MPH)

EXAMPLES:

An 8 foot shoulder in advance of a bridge reduces to 4 feet on a 70 MPH roadway. The length of the cross-hatching should be:
 $L = 8 \times 70 = 560$ ft.

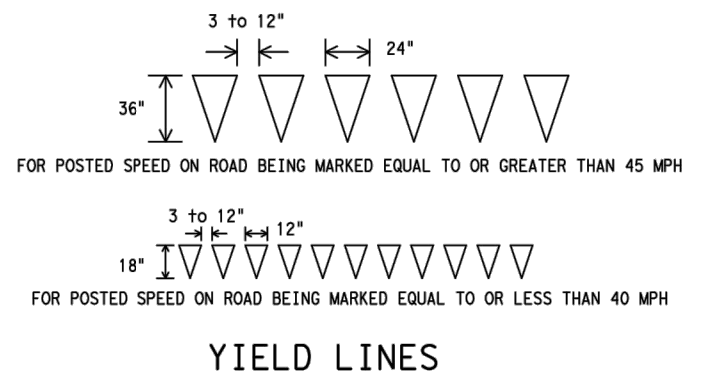
A 4 foot shoulder in advance of a bridge reduces to 2 feet on a 40 MPH roadway. The length of the cross-hatching should be:
 $L = 4(40)^2 / 60 = 106.67$ ft. rounded to 110 ft.

GENERAL NOTES

- Edgeline striping shall be as shown in the plans or as directed by the Engineer. The edgeline should typically be placed a minimum of 6 inches from the edge of pavement. This distance may vary due to pavement raveling or other conditions. Edgelines are not required in curb and gutter sections of roadways.
- The traveled way includes only that portion of the roadway used for vehicular travel and not the parking lanes, sidewalks, berms and shoulders. The traveled ways shall be measured from the inside of edgeline to inside of edgeline of a two lane roadway.

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



YIELD LINES

Texas Department of Transportation
Traffic Operations Division

**TYPICAL STANDARD
PAVEMENT MARKINGS**

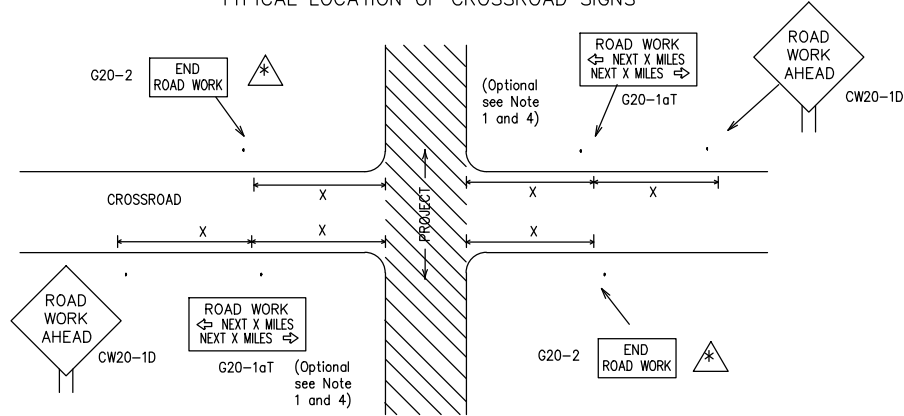
PM(1)-12

© TxDOT November 1978	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
8-95 2-12	CONT	SECT	JOB	HIGHWAY
5-00				
8-00	DIST	COUNTY		SHEET NO.
3-03				C27

DATE:
FILE:

FILE NAME: Z:\2016\Engineering\Hidalgo County\Project No.1\1.5. J. Flores, Engineman, Las Cumbres & Mile 20 N\Drawings\Civil\29-C28-TXDOT STANDARDS-BC-(2)-13 - BARRICADE AND CONSTRUCTION PROJECT LIMIT.dwg LAYOUT NAME: Layout1 PLOTTED: Monday, November 07, 2016 - 2:42pm USER: Administrator

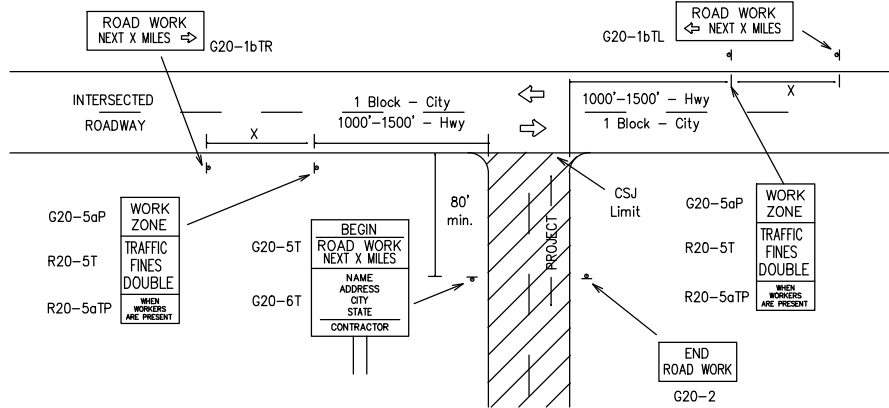
TYPICAL LOCATION OF CROSSROAD SIGNS



May be mounted on back of "ROAD WORK AHEAD" (CW20-1D) sign with approval of engineer. (See note 2 below)

- The typical minimum signing on a crossroad approach should be a "ROAD WORK AHEAD" (CW20-1D) sign and a (G20-2) "END ROAD WORK" sign, unless noted otherwise in plans.
- The Engineer may use the reduced size 36" x 36" ROAD WORK AHEAD (CW20-1D) sign mounted back to back with the reduced size 36" x 18" "END ROAD WORK" (G20-2) sign on low volume crossroads (see Note 4 under "Typical Construction Warning Sign Size and Spacing"). See the "Standard Highway Sign Designs for Texas" manual for sign details. The Engineer may omit the advance warning signs on low volume crossroads. The Engineer will determine whether a road is low volume. This information shall be shown in the plans.
- Based on existing field conditions, the Engineer/Inspector may require additional signs such as FLAGGER AHEAD, LOOSE GRAVEL, or other appropriate signs. When additional signs are required, these signs will be considered part of the minimum requirements. The Engineer/Inspector will determine the proper location and spacing of any sign not shown on the BC sheets, Traffic Control Plan sheets or the Work Zone Standard Sheets.
- The "ROAD WORK NEXT X MILES" (G20-1aT) sign shall be required at high volume crossroads to advise motorists of the length of construction in either direction from the intersection. The Engineer will determine whether a roadway is considered high volume.
- Additional traffic control devices may be shown elsewhere in the plans for higher volume crossroads.
- When work occurs in the intersection area, appropriate traffic control devices, as shown elsewhere in the plans or as determined by the Engineer/Inspector, shall be in place.

T-INTERSECTION



CSJ LIMITS AT T-INTERSECTION

- The Engineer will determine the types and location of any additional traffic control devices, such as a flagger and accompanying signs, or other signs, that should be used when work is being performed at or near an intersection.
- If construction closes the road at a T-intersection the Contractor shall place the "CONTRACTOR NAME" (G20-6T) sign behind the Type 3 Barricades for the road closure (see BC(10) also). The "ROAD WORK NEXT X MILES" left arrow (G20-1bTL) and "ROAD WORK NEXT X MILES" right arrow (G20-1bTR) signs shall be replaced by the detour signing called for in the plans.

TYPICAL CONSTRUCTION WARNING SIGN SIZE AND SPACING

Sign Number or Series	SIZE		SPACING	
	Conventional Road	Expressway/Freeway	Posted Speed	Sign Spacing "X"
CW20 ⁴ CW21 CW22 CW23	48" x 48"	48" x 48"	MPH	Feet (Apprx.)
			30	120
			35	160
			40	240
			45	320
			50	400
			55	500 ²
			60	600 ²
			65	700 ²
			70	800 ²
			75	900 ²
			80	1000 ²
			*	* ³

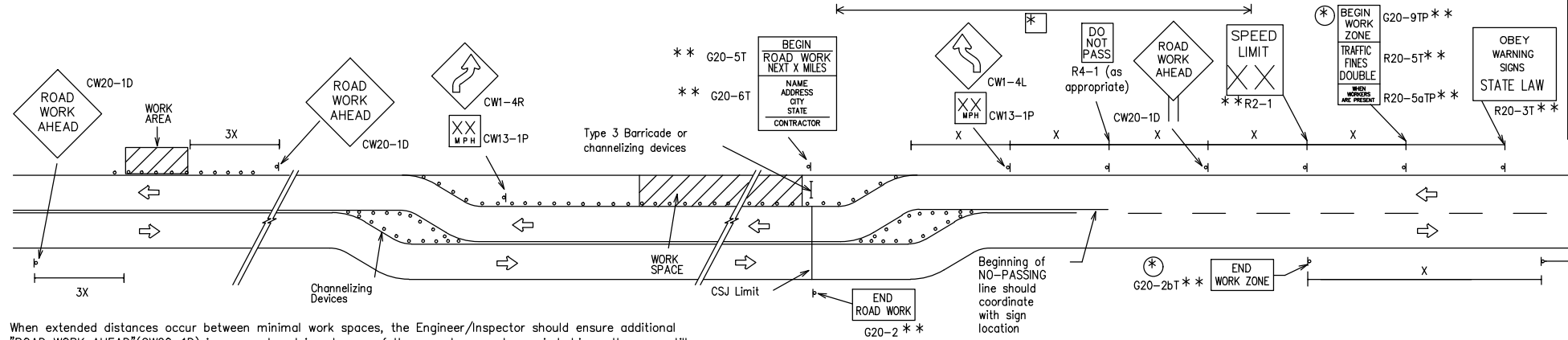
* For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

Δ Minimum distance from work area to first Advance Warning sign nearest the work area and/or distance between each additional sign.

GENERAL NOTES

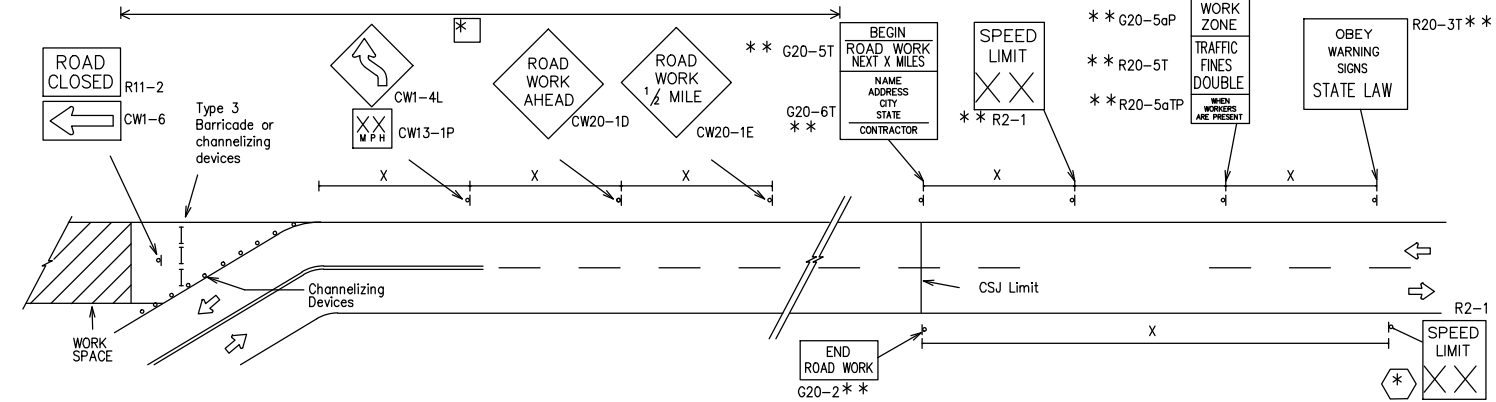
- Special or larger size signs may be used as necessary.
- Distance between signs should be increased as required to have 1500 feet advance warning.
- Distance between signs should be increased as required to have 1/2 mile or more advance warning.
- 36" x 36" "ROAD WORK AHEAD" (CW20-1D) signs may be used on low volume crossroads at the discretion of the Engineer. See Note 2 under "Typical Location of Crossroad Signs".
- Only diamond shaped warning sign sizes are indicated.
- See sign size listing in "TMUTCD", Sign Appendix or the "Standard Highway Sign Designs for Texas" manual for complete list of available sign design sizes.

WORK AREAS IN MULTIPLE LOCATIONS WITHIN CSJ LIMITS



When extended distances occur between minimal work spaces, the Engineer/Inspector should ensure additional "ROAD WORK AHEAD" (CW20-1D) signs are placed in advance of these work areas to remind drivers they are still within the project limits. See the applicable TCP sheets for exact location and spacing of signs and channelizing devices.

SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING DOWNSTREAM OF THE CSJ LIMITS



NOTES

- The Contractor shall determine the appropriate distance to be placed on the G20-1 series signs and "BEGIN ROAD WORK NEXT X MILES" (G20-5T) sign for each specific project. This distance shall replace the "X" and shall be rounded to the nearest whole mile with the approval of the Engineer. No decimals shall be used.
- * The "BEGIN WORK ZONE" (G20-9TP) and "END WORK ZONE" (G20-2bT) shall be used as shown on the sample layout when advance signs are required outside the CSJ Limits. They inform the motorist of entering or leaving a part of the work zone lying outside the CSJ Limits where traffic fines may double if workers are present.
- ** Required CSJ Limit signing. See Note 10 on BC(1). TRAFFIC FINES DOUBLE signs will not be required on projects consisting solely of mobile operations work.
- * Area for placement of "ROAD WORK AHEAD" (CW20-1D) sign and other signs or devices as called for on the Traffic Control Plan.
- * Contractor will install a regulatory speed limit sign at the end of the work zone.

LEGEND	
—	Type 3 Barricade
○ ○ ○	Channelizing Devices
—	Sign
X	See Typical Construction Warning Sign Size and Spacing chart or the TMUTCD for sign spacing requirements.

Texas Department of Transportation
Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION PROJECT LIMIT

BC(2)-13

FILE: bc-13.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS				
9-07				
7-13				
	DIST	COUNTY		SHEET NO.

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CONSULTANT'S SHEET
PROJECT NO. 16100-17

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF REVIEW UNDER THE AUTHORITY OF LUIS J. NAVA
P.E.# 943121
ON 11/07/16
IT IS NOT TO BE USED FOR ANY OTHER PURPOSE.

E

INTERNATIONAL CONSULTING ENGINEERS
1722 N. CLOSER BLVD., SUITE B
EMIBURG, TX 78841
PHONE: 956-523-5404
FAX: 381-826-5896

T.B.P.E. FIRM REGISTRATION #F-10837

HIDALGO COUNTY
PRECINCT NO. 1

1902 Joe Stephens Ave.
Weslaco, TX 78596
Tel. (956) 968-8733
Fax. (956) 969-1417
A.C. CUELLAR, JR.
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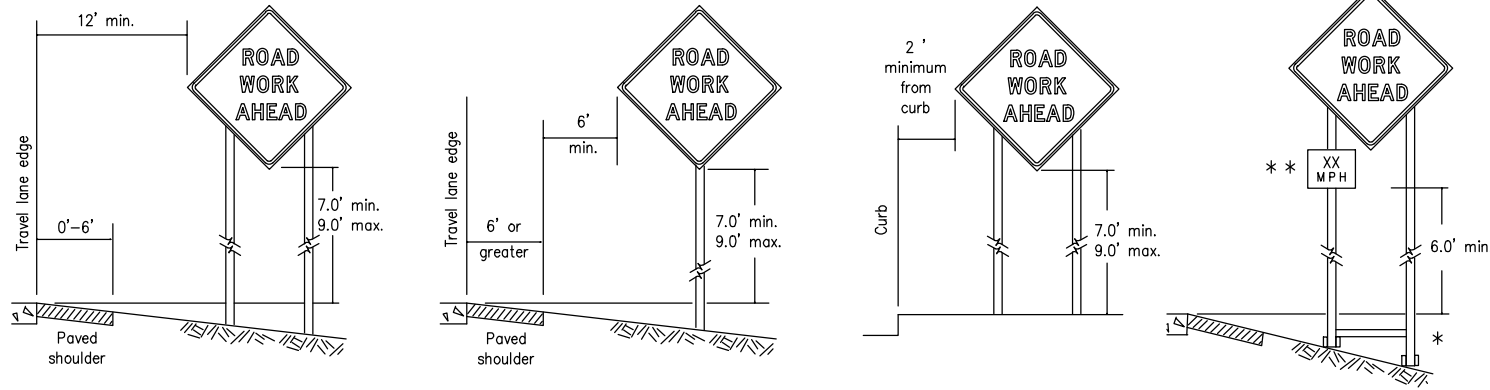
FEMA

Hidalgo County
Precinct 1

HIDALGO COUNTY
PRECINCT No. 1 AREA
ROAD DISTRESS MAINTENANCE
PROJECT LIMIT STANDARD BARRICADE AND
CONSTRUCTION

DRAWING NO.
C28
SHEET 29 of 33

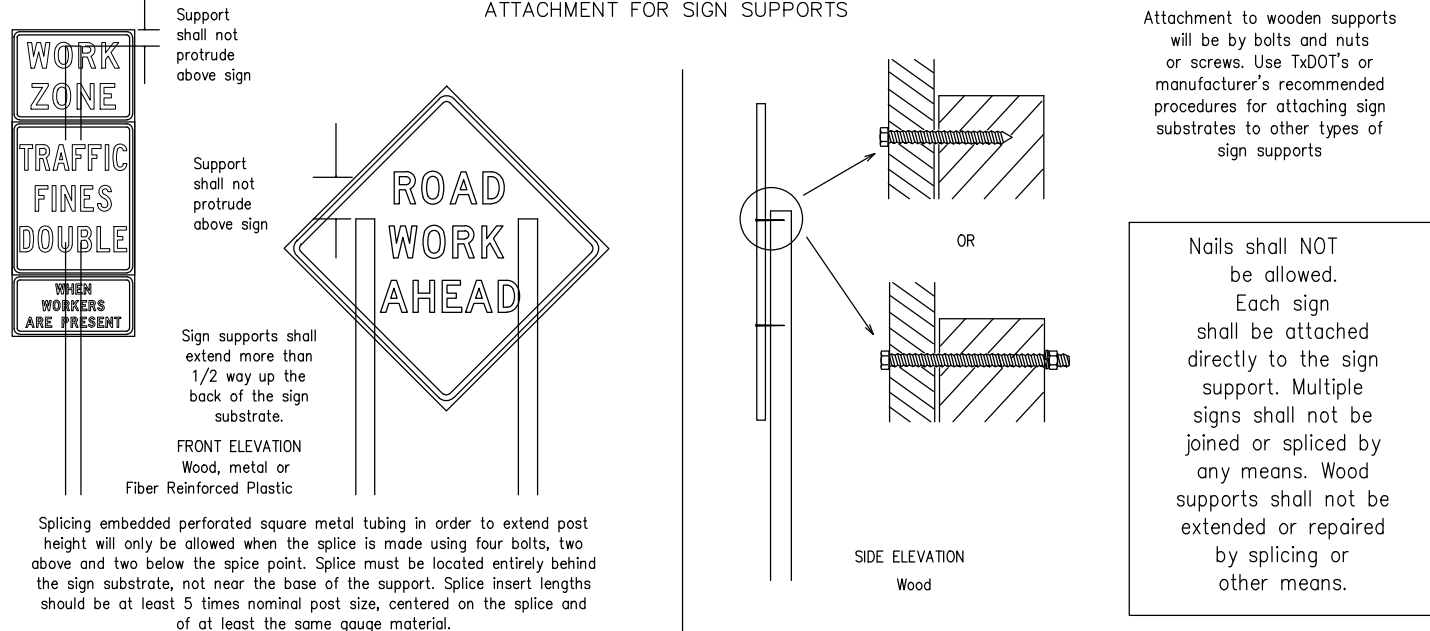
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS



* When placing skid supports on unlevel ground, the leg post lengths must be adjusted so the sign appears straight and plumb. Objects shall NOT be placed under skids as a means of leveling.

** When plaques are placed on dual-leg supports, they should be attached to the upright nearest the travel lane. Supplemental plaques (advisory or distance) should not cover the surface of the parent sign.

ATTACHMENT FOR SIGN SUPPORTS



GENERAL NOTES FOR WORK ZONE SIGNS

- Contractor shall install and maintain signs in a straight and plumb condition and/or as directed by the Engineer.
 - Wooden sign posts shall be painted white.
 - Barricades shall NOT be used as sign supports.
 - All signs shall be installed in accordance with the plans or as directed by the Engineer. Signs shall be used to regulate, warn, and guide the traveling public safely through the work zone.
 - The Contractor may furnish either the sign design shown in the plans or in the "Standard Highway Sign Designs for Texas" (SHSD). The Engineer/Inspector may require the Contractor to furnish other work zone signs that are shown in the TMUTCD but may have been omitted from the plans. Any variation in the plans shall be documented by written agreement between the Engineer and the Contractor's Responsible Person. All changes must be documented in writing before being implemented. This can include documenting the changes in the Inspector's TxDOT diary and having both the Inspector and Contractor initial and date the agreed upon changes.
 - The Contractor shall furnish sign supports listed in the "Compliant Work Zone Traffic Control Device List" (CWZTCD). The Contractor shall install the sign support in accordance with the manufacturer's recommendations. If there is a question regarding installation procedures, the Contractor shall furnish the Engineer a copy of the manufacturer's installation recommendations so the Engineer can verify the correct procedures are being followed.
 - The Contractor is responsible for installing signs on approved supports and replacing signs with damaged or cracked substrates and/or damaged or marred reflective sheeting as directed by the Engineer/Inspector.
 - Identification markings may be shown only on the back of the sign substrate. The maximum height of letters and/or company logos used for identification shall be 1 inch.
 - The Contractor shall replace damaged wood posts. New or damaged wood sign posts shall not be spliced.
- DURATION OF WORK (as defined by the "Texas Manual on Uniform Traffic Control Devices" Part 6)
- The types of sign supports, sign mounting height, the size of signs, and the type of sign substrates can vary based on the type of work being performed. The Engineer is responsible for selecting the appropriate size sign for the type of work being performed. The Contractor is responsible for ensuring the sign support, sign mounting height and substrate meets manufacturer's recommendations in regard to crashworthiness and duration of work requirements.
 - Long-term stationary - work that occupies a location more than 3 days.
 - Intermediate-term stationary - work that occupies a location more than one daylight period up to 3 days, or nighttime work lasting more than one hour.
 - Short-term stationary - daytime work that occupies a location for more than 1 hour in a single daylight period.
 - Short, duration - work that occupies a location up to 1 hour.
 - Mobile - work that moves continuously or intermittently (stopping for up to approximately 15 minutes.)

SIGN MOUNTING HEIGHT

- The bottom of Long-term/Intermediate-term signs shall be at least 7 feet, but not more than 9 feet, above the paved surface, except as shown for supplemental plaques mounted below other signs.
- The bottom of Short-term/Short Duration signs shall be a minimum of 1 foot above the pavement surface but no more than 2 feet above the ground.
- Long-term/Intermediate-term Signs may be used in lieu of Short-term/Short Duration signing.
- Short-term/Short Duration signs shall be used only during daylight and shall be removed at the end of the workday or raised to appropriate Long-term/Intermediate sign height.
- Regulatory signs shall be mounted at least 7 feet, but not more than 9 feet, above the paved surface regardless of work duration.

SIZE OF SIGNS

- The Contractor shall furnish the sign sizes shown on BC (2) unless otherwise shown in the plans or as directed by the Engineer.

SIGN SUBSTRATES

- The Contractor shall ensure the sign substrate is installed in accordance with the manufacturer's recommendations for the type of sign support that is being used. The CWZTCD lists each substrate that can be used on the different types and models of sign supports.
- "Mesh" type materials are NOT an approved sign substrate, regardless of the tightness of the weave.
- All wooden individual sign panels fabricated from 2 or more pieces shall have one or more plywood cleat, 1/2" thick by 6" wide, fastened to the back of the sign and extending fully across the sign. The cleat shall be attached to the back of the sign using wood screws that do not penetrate the face of the sign panel. The screws shall be placed on both sides of the splice and spaced at 6" centers. The Engineer may approve other methods of splicing the sign face.

REFLECTIVE SHEETING

- All signs shall be retroreflective and constructed of sheeting meeting the color and retro-reflectivity requirements of DMS-8300 for rigid signs or DMS-8310 for roll-up signs. The web address for DMS specifications is shown on BC(1).
- White sheeting, meeting the requirements of DMS-8300 Type A, shall be used for signs with a white background.
- Orange sheeting, meeting the requirements of DMS-8300 Type B or Type C, shall be used for rigid signs with orange backgrounds.

SIGN LETTERS

- All sign letters and numbers shall be clear, and open rounded type uppercase alphabet letters as approved by the Federal Highway Administration (FHWA) and as published in the "Standard Highway Sign Design for Texas" manual. Signs, letters and numbers shall be of first class workmanship in accordance with Department Standards and Specifications.

REMOVING OR COVERING

- When sign messages may be confusing or do not apply, the signs shall be removed or completely covered.
- Long-term stationary or intermediate stationary signs installed on square metal tubing may be turned away from traffic 90 degrees when the sign message is not applicable. This technique may not be used for signs installed in the median of divided highways or near any intersections where the sign may be seen from approaching traffic.
- Signs installed on wooden skids shall not be turned at 90 degree angles to the roadway. These signs should be removed or completely covered when not required.
- When signs are covered, the material used shall be opaque, such as heavy mil black plastic, or other materials which will cover the entire sign face and maintain their opaque properties under automobile headlights at night, without damaging the sign sheeting.
- Burlap shall NOT be used to cover signs.
- Duct tape or other adhesive material shall NOT be affixed to a sign face.
- Signs and anchor stubs shall be removed and holes backfilled upon completion of work.

SIGN SUPPORT WEIGHTS

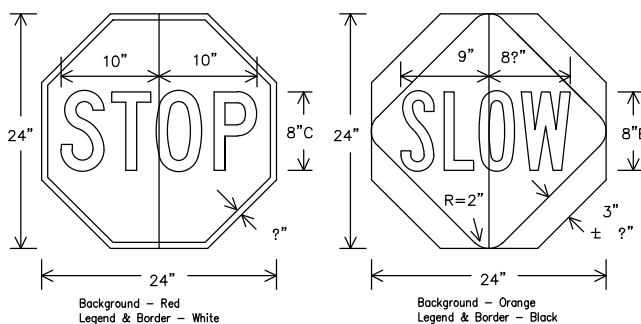
- Where sign supports require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand should be used.
- The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight.
- Rock, concrete, iron, steel or other solid objects shall not be permitted for use as sign support weights.
- Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs.
- Sandbags shall be made of a durable material that tears upon vehicular impact. Rubber (such as tire inner tubes) shall NOT be used.
- Rubber ballasts designed for channelizing devices should not be used for ballast on portable sign supports. Sign supports designed and manufactured with rubber bases may be used when shown on the CWZTCD list.
- Sandbags shall only be placed along or laid over the base supports of the traffic control device and shall not be suspended above ground level or hung with rope, wire, chains or other fasteners. Sandbags shall be placed along the length of the skids to weigh down the sign support.
- Sandbags shall NOT be placed under the skid and shall not be used to level sign supports placed on slopes.

FLAGS ON SIGNS

- Flags may be used to draw attention to warning signs. When used the flag shall be 16 inches square or larger and shall be orange or fluorescent red-orange in color. Flags shall not be allowed to cover any portion of the sign face.

STOP/SLOW PADDLES

- STOP/SLOW paddles are the primary method to control traffic by flaggers. The STOP/SLOW paddle size should be 24" x 24" as detailed below.
- When used at night, the STOP/SLOW paddle shall be retroreflectORIZED.
- STOP/SLOW paddles may be attached to a staff with a minimum length of 6' to the bottom of the sign.
- Any lights incorporated into the STOP or SLOW paddle faces shall only be as specifically described in Section 6E.03 Hand Signaling Devices in the TMUTCD.



CONTRACTOR REQUIREMENTS FOR MAINTAINING PERMANENT SIGNS WITHIN THE PROJECT LIMITS

- Permanent signs are used to give notice of traffic laws or regulations, call attention to conditions that are potentially hazardous to traffic operations, show route designations, destinations, directions, distances, services, points of interest, and other geographical, recreational, or cultural information. Drivers proceeding through a work zone need the same, if not better route guidance as normally installed on a roadway without construction.
- When permanent regulatory or warning signs conflict with work zone conditions, remove or cover the permanent signs until the permanent sign message matches the roadway condition.
- When existing permanent signs are moved and relocated due to construction purposes, they shall be visible to motorists at all times.
- If existing signs are to be relocated on their original supports, they shall be installed on crashworthy bases as shown on the SMD Standard sheets. The signs shall meet the required mounting heights shown on the BC Sheets or the SMD Standards. This work should be paid for under the appropriate pay item for relocating existing signs.
- If permanent signs are to be removed and relocated using temporary supports, the Contractor shall use crashworthy supports as shown on the BC sheets or the CWZTCD. The signs shall meet the required mounting heights shown on the BC Sheets or the SMD Standards during construction. This work should be paid for under the appropriate pay item for relocating existing signs.
- Any sign or traffic control device that is struck or damaged by the Contractor or his/her construction equipment shall be replaced as soon as possible by the Contractor to ensure proper guidance for the motorists. This will be subsidiary to Item 502.

90% REVIEW SUBMITTAL

CONSULTANT'S SHEET
PROJECT NO. 16100-17

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF REVIEW UNDER THE AUTHORITY OF LUIS J. NAVA P.E. # 941271 ON 11/07/16 IT IS NOT TO BE USED FOR ANY OTHER PURPOSE.

HIDALGO COUNTY
PRECINCT NO. 1

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Tel. (956) 968-8733
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A.C. CUELLAR, JR.
County Commissioner PCT No. 1



HIDALGO COUNTY
PRECINCT NO. 1 AREA
ROAD DISTRESS MAINTENANCE
BARRICADE AND CONSTRUCTION
TEMPORARY SIGN NOTES STANDARD

Texas Department of Transportation
Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION
TEMPORARY SIGN NOTES

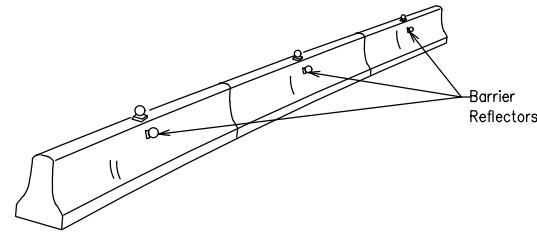
BC(4)-13

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DRAWING NO.
C29
SHEET 30 of 33

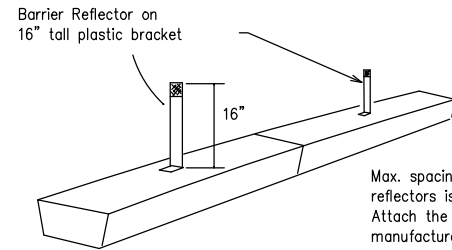
FILE NAME: Z:\2016\Engineering\Hidalgo County Precinct No. 1\15_J. Flores, Engineman, Las Cumbres & Mile 20 N\Drawings\CA\31-C30-TXDOT STANDARDS-BC(7)-13 - BARRICADE AND CONSTRUCTION ARROW PANEL REFLECTORS WARNING LIGHTS AND ATTENUATORS.dwg LAYOUT NAME: Layout1 PLOTTED: Monday, November 11, 2014 10:58:44 AM

- Barrier Reflectors shall be pre-qualified, and conform to the color and reflectivity requirements of DMS-8600. A list of prequalified Barrier Reflectors can be found at the Material Producer List web address shown on BC(1).
- Color of Barrier Reflectors shall be as specified in the TMUTCD. The cost of the reflectors shall be considered subsidiary to Item 512.

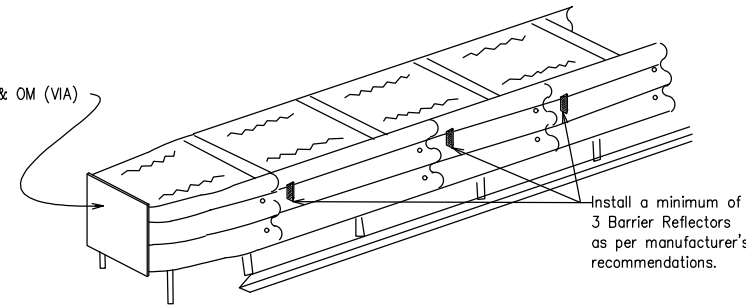


CONCRETE TRAFFIC BARRIER (CTB)

- Where traffic is on one side of the CTB, two (2) Barrier Reflectors shall be mounted in approximately the midsection of each section of CTB. An alternate mounting location is uniformly spaced at one end of each CTB. This will allow for attachment of a barrier grapple without damaging the reflector. The Barrier Reflector mounted on the side of the CTB shall be located directly below the reflector mounted on top of the barrier, as shown in the detail above.
- Where CTB separates two-way traffic, three barrier reflectors shall be mounted on each section of CTB. The reflector unit on top shall have two yellow reflective faces (Bi-Directional) while the reflectors on each side of the barrier shall have one yellow reflective face, as shown in the detail above.
- When CTB separates traffic traveling in the same direction, no barrier reflectors will be required on top of the CTB.
- Barrier Reflector units shall be yellow or white in color to match the edgeline being supplemented.
- Maximum spacing of Barrier Reflectors is forty (40) feet.
- Pavement markers or temporary flexible-reflective roadway marker tabs shall NOT be used as CTB delineation.
- Attachment of Barrier Reflectors to CTB shall be per manufacturer's recommendations.
- Missing or damaged Barrier Reflectors shall be replaced as directed by the Engineer.
- Single slope barriers shall be delineated as shown on the above detail.



LOW PROFILE CONCRETE BARRIER (LPCB)



DELINEATION OF END TREATMENTS

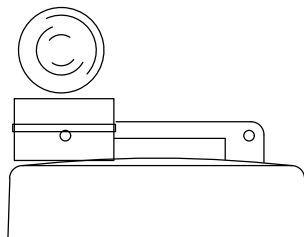
END TREATMENTS FOR CTB'S USED IN WORK ZONES

End treatments used on CTB's in work zones shall meet crashworthy standards as defined in the National Cooperative Highway Research Report 350. Refer to the CWZTCD List for approved end treatments and manufacturers.

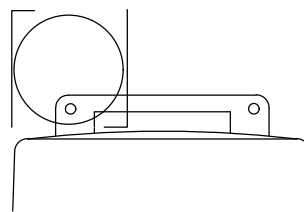
BARRIER REFLECTORS FOR CONCRETE TRAFFIC BARRIER AND ATTENUATORS

WARNING LIGHTS

- Warning lights shall meet the requirements of the TMUTCD.
- Warning lights shall NOT be installed on barricades.
- Type A-Low Intensity Flashing Warning Lights are commonly used with drums. They are intended to warn of or mark a potentially hazardous area. Their use shall be as indicated on this sheet and/or other sheets of the plans by the designation "FL". The Type A Warning Lights shall not be used with signs manufactured with Type B or C sheeting meeting the requirements of Departmental Material Specification DMS-8300.
- Type-C and Type D 360 degree Steady Burn Lights are intended to be used in a series for delineation to supplement other traffic control devices. Their use shall be as indicated on this sheet and/or other sheets of the plans by the designation "SB".
- The Engineer/Inspector or the plans shall specify the location and type of warning lights to be installed on the traffic control devices.
- When required by the Engineer, the Contractor shall furnish a copy of the warning lights certification. The warning light manufacturer will certify the warning lights meet the requirements of the latest ITE Purchase Specifications for Flashing and Steady-Burn Warning Lights.
- When used to delineate curves, Type-C and Type D Steady Burn Lights should only be placed on the outside of the curve, not the inside.
- The location of warning lights and warning reflectors on drums shall be as shown elsewhere in the plans.



Type C Warning Light or approved substitute mounted on a drum adjacent to the travel way.



Warning reflector may be round or square. Must have a yellow reflective surface area of at least 30 square inches

WARNING LIGHTS MOUNTED ON PLASTIC DRUMS

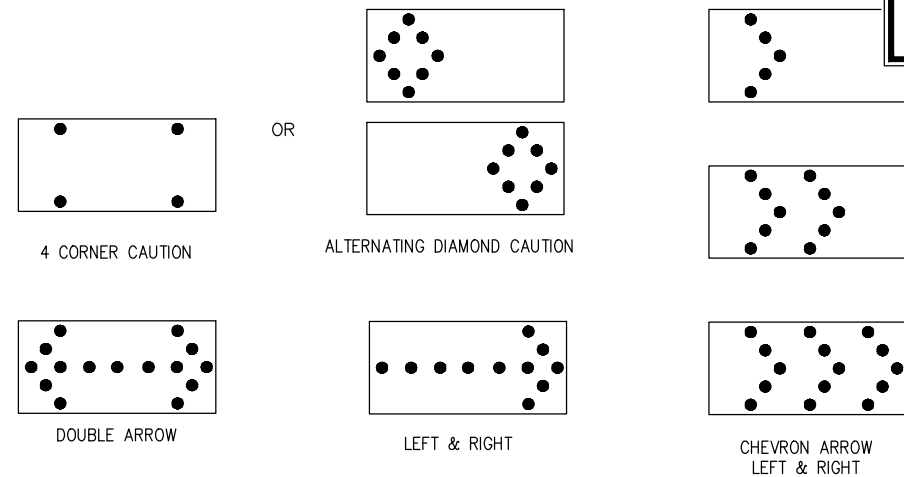
- Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
- Type A random flashing warning lights are not intended for delineation and shall not be used in a series.
- A series of sequential flashing warning lights placed on channelizing devices to form a merging taper may be used for delineation. If used, the successive flashing of the sequential warning lights should occur from the beginning of the taper to the end of the merging taper in order to identify the desired vehicle path. The rate of flashing for each light shall be 65 flashes per minute, plus or minus 10 flashes.
- Type C and D steady-burn warning lights are intended to be used in a series to delineate the edge of the travel lane on detours, on lane changes, on lane closures, and on other similar conditions.
- Type A, Type C and Type D warning lights shall be installed at locations as detailed on other sheets in the plans.
- Warning lights shall not be installed on a drum that has a sign, chevron or vertical panel.
- The maximum spacing for warning lights on drums should be identical to the channelizing device spacing.

WARNING REFLECTORS MOUNTED ON PLASTIC DRUMS AS A SUBSTITUTE FOR TYPE C (STEADY BURN) WARNING LIGHTS

- A warning reflector or approved substitute may be mounted on a plastic drum as a substitute for a Type C, steady burn warning light at the discretion of the Contractor unless otherwise noted in the plans.
- The warning reflector shall be yellow in color and shall be manufactured using a sign substrate approved for use with plastic drums listed on the CWZTCD.
- The warning reflector shall have a minimum retroreflective surface area (one-side) of 30 square inches.
- Round reflectors shall be fully reflectorized, including the area where attached to the drum.
- Square substrates must have a minimum of 30 square inches of reflectorized sheeting. They do not have to be reflectorized where it attaches to the drum.
- The side of the warning reflector facing approaching traffic shall have sheeting meeting the color and retroreflectivity requirements for DMS 8300-Type B or Type C.
- When used near two-way traffic, both sides of the warning reflector shall be reflectorized.
- The warning reflector should be mounted on the side of the handle nearest approaching traffic.
- The maximum spacing for warning reflectors should be identical to the channelizing device spacing requirements.

Arrow Boards may be located behind channelizing devices in place for a shoulder taper or merging taper, otherwise they shall be delineated with four (4) channelizing devices placed perpendicular to traffic on the upstream side of traffic.

- The Flashing Arrow Board should be used for all lane closures on multi-lane roadways, or slow moving maintenance or construction activities on the travel lanes.
- Flashing Arrow Boards should not be used on two-lane, two-way roadways, detours, diversions or work on shoulders unless the "CAUTION" display (see detail below) is used.
- The Engineer/Inspector shall choose all appropriate signs, barricades and/or other traffic control devices that should be used in conjunction with the Flashing Arrow Board.
- The Flashing Arrow Board should be able to display the following symbols:



- The "CAUTION" display consists of four corner lamps flashing simultaneously, or the Alternating Diamond Caution mode as shown.
- The straight line caution display is NOT ALLOWED.
- The Flashing Arrow Board shall be capable of minimum 50 percent dimming from rated lamp voltage. The flashing rate of the lamps shall not be less than 25 nor more than 40 flashes per minute.
- Minimum lamp "on time" shall be approximately 50 percent for the flashing arrow and equal intervals of 25 percent for each sequential phase of the flashing chevron.
- The sequential arrow display is NOT ALLOWED.
- The flashing arrow display is the TxDOT standard; however, the sequential Chevron display may be used during daylight operations.
- The Flashing Arrow Board shall be mounted on a vehicle, trailer or other suitable support.
- A Flashing Arrow Board SHALL NOT BE USED to laterally shift traffic.
- A full matrix PCMS may be used to simulate a Flashing Arrow Board provided it meets visibility, flash rate and dimming requirements on this sheet for the same size arrow.
- Minimum mounting height of trailer mounted Arrow Boards should be 7 feet from roadway to bottom of panel.

REQUIREMENTS			
TYPE	MINIMUM SIZE	MINIMUM NUMBER OF PANEL LAMPS	MINIMUM VISIBILITY DISTANCE
B	30 x 60	13	3/4 mile
C	48 x 96	15	1 mile

ATTENTION
Flashing Arrow Boards shall be equipped with automatic dimming devices.
WHEN NOT IN USE, REMOVE THE ARROW BOARD FROM THE RIGHT-OF-WAY OR PLACE THE ARROW BOARD BEHIND CONCRETE TRAFFIC BARRIER OR GUARDRAIL.

FLASHING ARROW BOARDS

TRUCK-MOUNTED ATTENUATORS

- Truck-mounted attenuators (TMA) used on TxDOT facilities must meet the requirements outlined in the National Cooperative Highway Research Report No. 350 (NCHRP 350) or the Manual for Assessing Safety Hardware (MASH).
- Refer to the CWZTCD for the requirements of Level 2 or Level 3 TMAs.
- Refer to the CWZTCD for a list of approved TMAs.
- TMAs are required on freeways unless otherwise noted in the plans.
- A TMA should be used anytime that it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the work performance.
- The only reason a TMA should not be required is when a work area is spread down the roadway and the work crew is an extended distance from the TMA.

Texas Department of Transportation
Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION ARROW PANEL, REFLECTORS, WARNING LIGHTS & ATTENUATOR

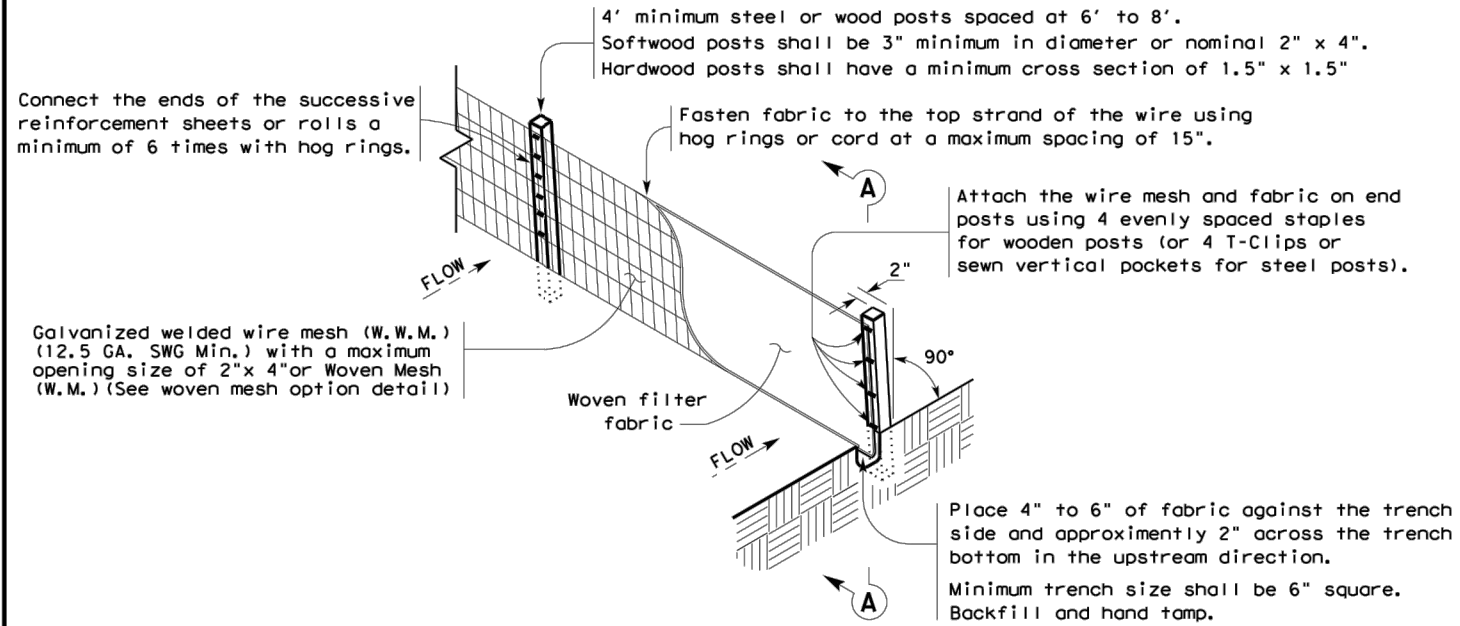
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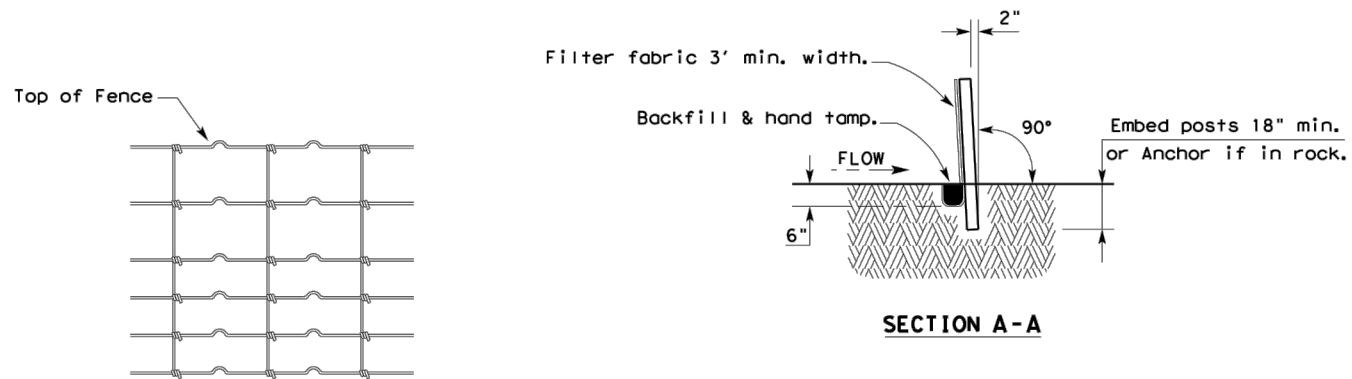
REVISION NO. DATE BY DESCRIPTION	HIDALGO COUNTY PRECINCT NO. 1 ROAD DISTRESS MAINTENANCE BARRICADE AND CONSTRUCTION STANDARDS PLASTIC DRUMS	CONSULTANT'S SHEET PROJECT NO. 16100-17 THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF REVIEW UNDER THE AUTHORITY OF LUIS J. NAVA, P.E.# 943171 ON 11/07/16 IT IS NOT TO BE USED FOR ANY OTHER PURPOSE.	INTERNATIONAL CONSULTING ENGINEERS 1722 N. CLOSER BLVD., SUITE B ENID, OKLA. 73644 PHONE: 585.323.5404 FAX: 585.323.5896 I.B.P.E. FIRM REGISTRATION #F-10837	1902 Joe Stephens Ave. Weslaco, TX 78596 Tel. (956) 968-8733 Fax. (956) 968-1417 A.C. CUELLAR JR. County Commissioner PCT No. 1	FEMA
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TEMPORARY SEDIMENT CONTROL FENCE

SCF



HINGE JOINT KNOT WOVEN MESH (OPTION) DETAIL

Galvanized hinge joint knot woven mesh (12.5 GA. SWG Min.) requires a minimum of five horizontal wires spaced at a maximum of 12 inches apart and all vertical wires spaced at a maximum of 12 inches apart.

SEDIMENT CONTROL FENCE USAGE GUIDELINES

A sediment control fence may be constructed near the downstream perimeter of a disturbed area along a contour to intercept sediment from overland runoff. A 2 year storm frequency may be used to calculate the flow rate to be filtered.

Sediment control fence should be sized to filter a maximum flow through rate of 100 GPM/FT². Sediment control fence is not recommended to control erosion from a drainage area larger than 2 acres.

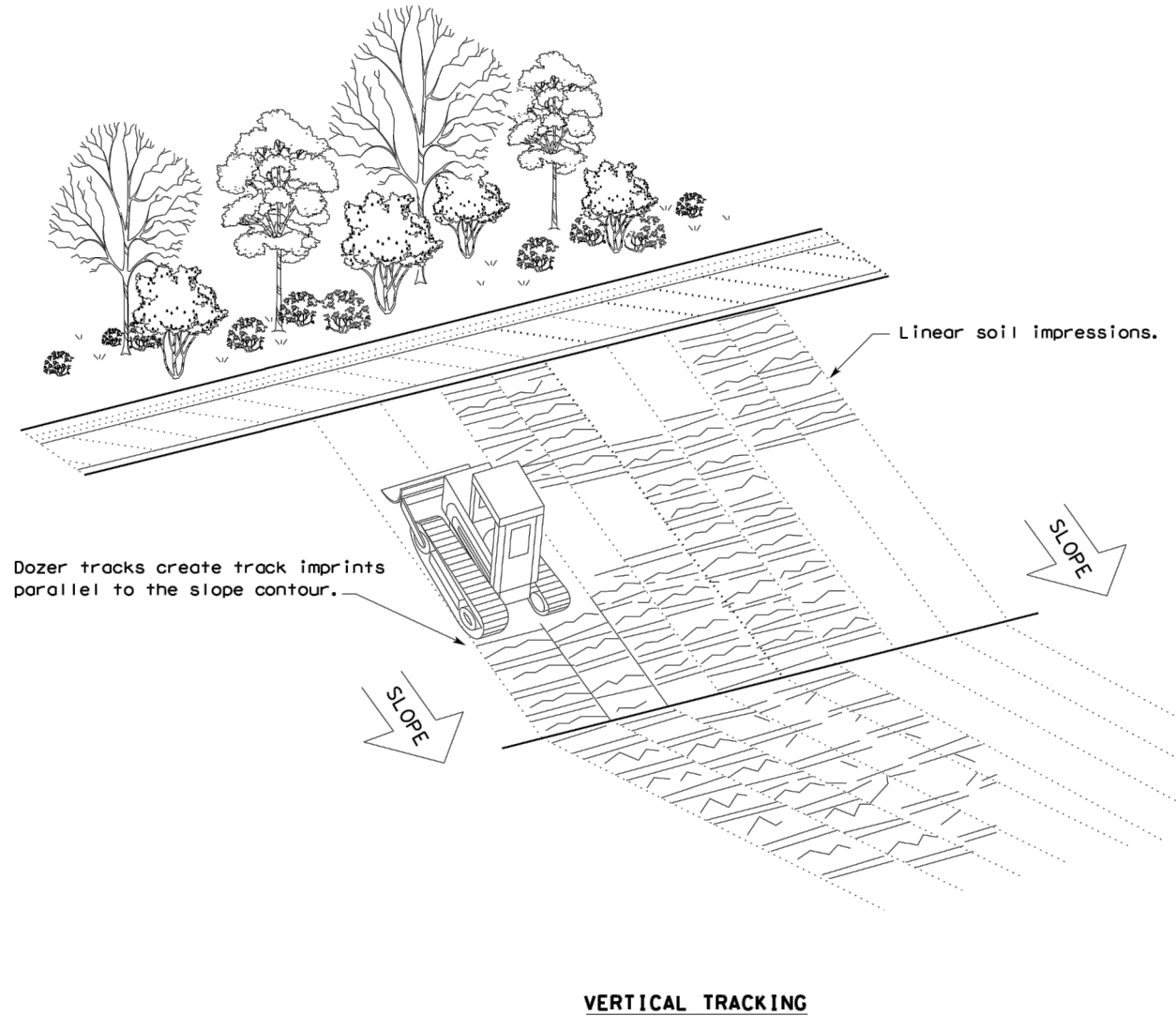
LEGEND

Sediment Control Fence

SCF

GENERAL NOTES

1. Vertical tracking is required on projects where soil distributing activities have occurred unless otherwise approved.
2. Perform vertical tracking on slopes to temporarily stabilize soil.
3. Provide equipment with a track undercarriage capable of producing linear soil impressions measuring a minimum of 12" in length by 2" to 4" in width by 1/2" to 2" in depth.
4. Do not exceed 12" between track impressions.
5. Install continuous linear track impressions where the minimum 12" length impressions are perpendicular to the slope or direction of water flow.



EROSION CONTROL DETAILS

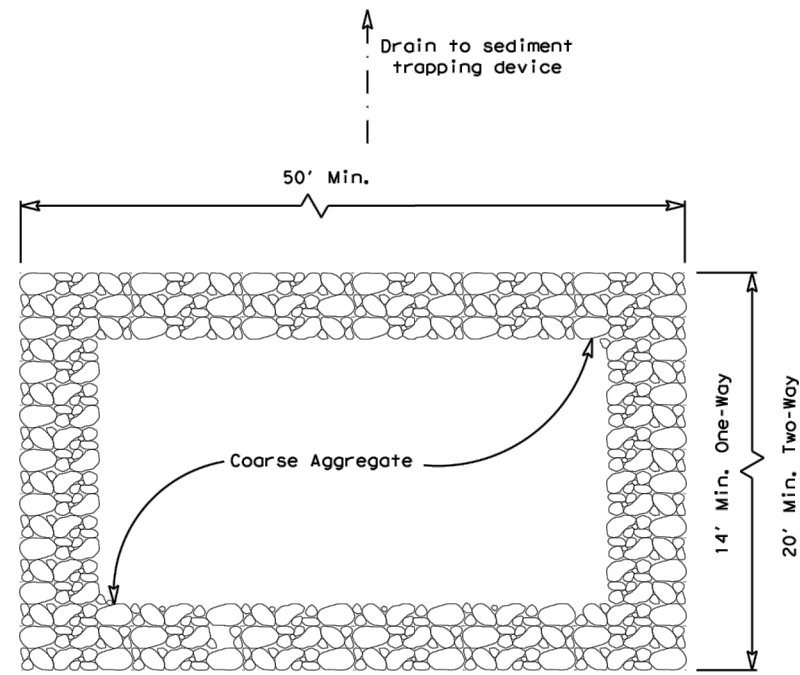


TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES FENCE & VERTICAL TRACKING EC(1)-16

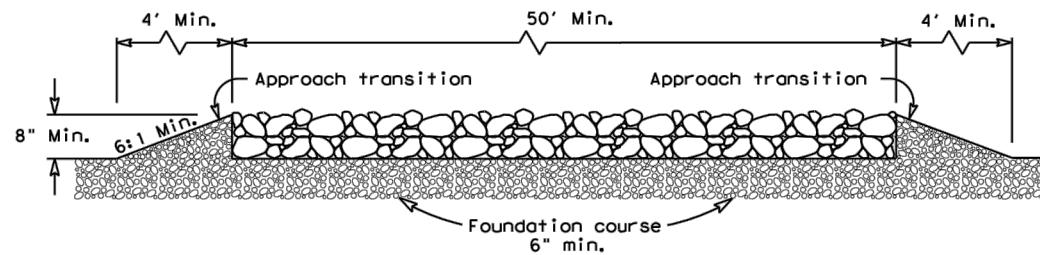
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PLAN VIEW

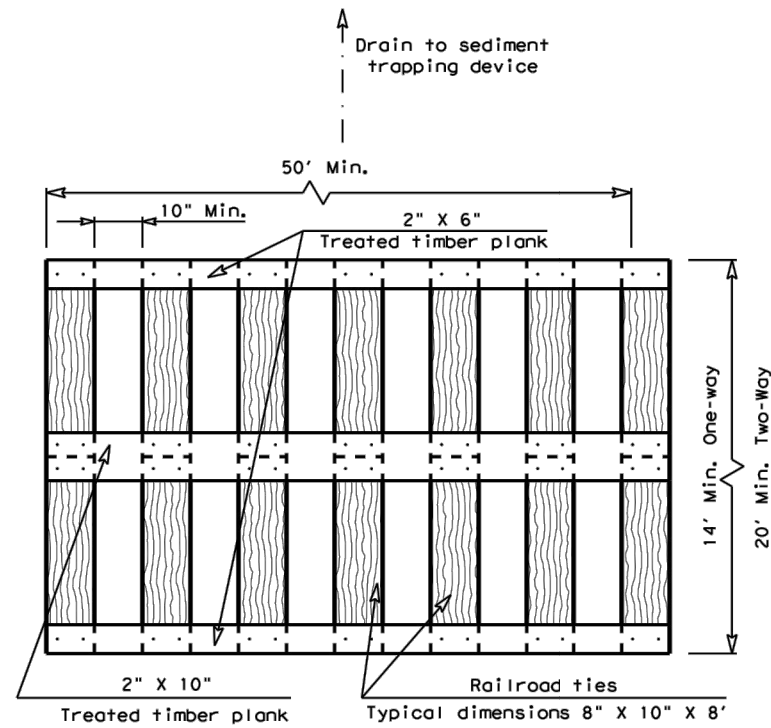


ELEVATION VIEW

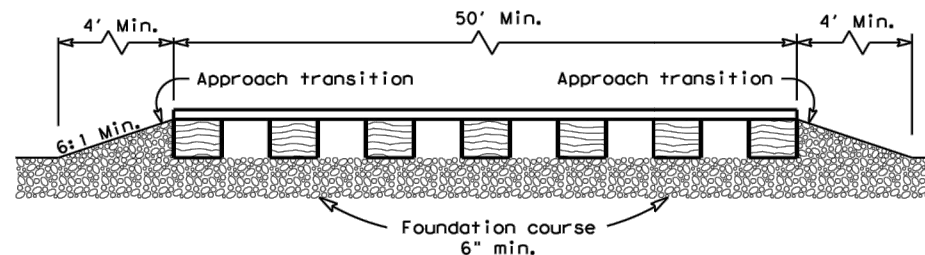
CONSTRUCTION EXIT (TYPE 1)
ROCK CONSTRUCTION (LONG TERM)

GENERAL NOTES (TYPE 1)

1. The length of the type 1 construction exit shall be as indicated on the plans, but not less than 50'.
2. The coarse aggregate should be open graded with a size of 4" to 8".
3. The approach transitions should be no steeper than 6:1 and constructed as directed by the Engineer.
4. The construction exit foundation course shall be flexible base, bituminous concrete, portland cement concrete or other materials approved by the Engineer.
5. The construction exit shall be graded to allow drainage to a sediment trapping device.
6. The guidelines shown hereon are suggestions only and may be modified by the Engineer.
7. Construct exits with a width of at least 14 ft. for one-way and 20 ft. for two-way traffic for the full width of the exit, or as directed by the engineer.



PLAN VIEW

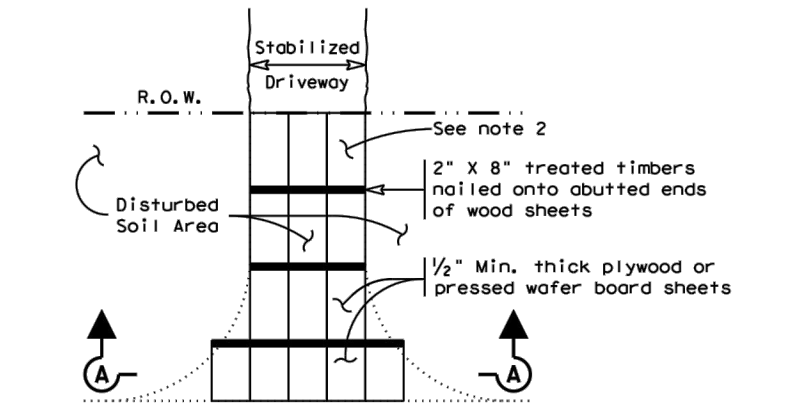


ELEVATION VIEW

CONSTRUCTION EXIT (TYPE 2)
TIMBER CONSTRUCTION (LONG TERM)

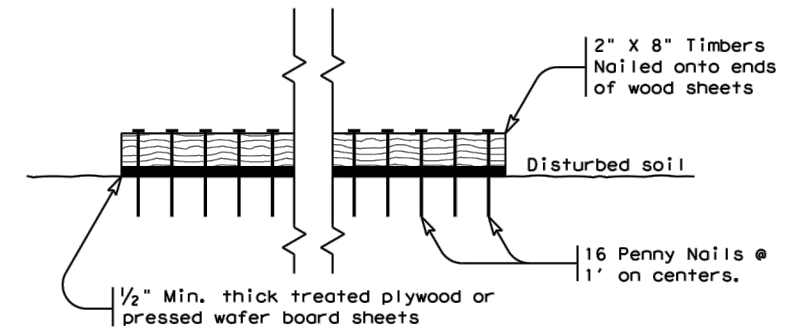
GENERAL NOTES (TYPE 2)

1. The length of the type 2 construction exit shall be as indicated on the plans, but not less than 50'.
2. The treated timber planks shall be attached to the railroad ties with 1/2" x 6" min. lag bolts. Other fasteners may be used as approved by the Engineer.
3. The treated timber planks shall be #2 grade min., and should be free from large and loose knots.
4. The approach transitions shall be no steeper than 6:1 and constructed as directed by the Engineer.
5. The construction exit foundation course shall be flexible base, bituminous concrete, portland cement concrete or other material as approved by the Engineer.
6. The construction exit should be graded to allow drainage to a sediment trapping device.
7. The guidelines shown hereon are suggestions only and may be modified by the Engineer.
8. Construct exits with a width of at least 14 ft. for one-way and 20 ft. for two-way traffic for the full width of the exit, or as directed by the engineer.



Paved Roadway

PLAN VIEW



SECTION A-A

CONSTRUCTION EXIT (TYPE 3)
SHORT TERM

GENERAL NOTES (TYPE 3)

1. The length of the type 3 construction exit shall be as shown on the plans, or as directed by the Engineer.
2. The type 3 construction exit may be constructed from open graded crushed stone with a size of two to four inches spread a min. of 4" thick to the limits shown on the plans.
3. The treated timber planks shall be #2 grade min., and should be free from large and loose knots.
4. The guidelines shown hereon are suggestions only and may be modified by the Engineer.



**TEMPORARY EROSION,
SEDIMENT AND WATER
POLLUTION CONTROL MEASURES
CONSTRUCTION EXITS
EC(3)-16**

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