

ALL CONSTRUCTION TO BE COORDINATED WITH CITY OF CORPUS CHRISTI UTILITIES & ELECTRICAL AGENTS AND NUECES COUNTY PUBLIC WORKS.

2. PRIOR TO THE COMMENCEMENT OF ANY WORK AT PROJECT SITE, CONTRACTOR SHALL VERIFY WITH CITY OF CORPUS CHRISTI AGENTS THAT PROPOSED CONSTRUCTION METHODS WILL NOT INTERFERE OR IMPEDE ANY DAILY ACTIVITY OF CITY OF CORPUS CHRISTI LOCATED IN THIS SECTION.

3. 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.

4. ANY FINES AND/OR PENALTIES FOR FAILURE TO MAINTAIN AND/OR IMPLEMENT EROSION AND SEDIMENT CONTROL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

5. 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.

6. ALL SAFETY EXPOSURES AND 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 ARCHITECT/ENGINEER.

7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING ALL CLEARANCES AND PERMITS AS NECESSARY, PRIOR TO THE COMMENCEMENT OF THE WORK.

8. WORK AREAS SHALL BE KEPT, AT ALL TIMES, FREE OF DEBRIS AND NON-HAZARDOUS MATERIAL TO THE SATISFACTION OF THE ARCHITECT/ENGINEER. ALL EXISTING PIPING AND CONDUITS SHALL HAVE TEMPORARY PROTECTION DURING CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE STORAGE OF MATERIALS, PARKING OF VEHICLES, AND RESTRICTIONS OF WORK WITH ARCHITECT AFTER PROJECT COMPLETION. THE SITE SHALL BE CLEANED UP TO ITS ORIGINAL PRIOR TO THE START OF THE PROJECT TO THE SATISFACTION OF THE ARCHITECT/ENGINEER.

9. THE SEQUENCE OF CONSTRUCTION SHALL BE SCHEDULED AND COORDINATED WITH THE ARCHITECT/ENGINEER.

10. 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.

11. 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.

12. 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 ARCHITECT AND THE ENGINEER FOR APPROVAL.

13. ALL CONSTRUCTION DRAWINGS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE LATEST EDITIONS OF THE FOLLOWING NATIONAL CODES AND STANDARDS:

- A. INTERNATIONAL BUILDING CODES, 2006/2009 (IBC2006/2009)
- B. AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE) 7-05
- C. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)
- D. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
- E. INTERNATIONAL FIRE CODE (IFC 2006)
- F. TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (2006)

14. 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.

15. EXCAVATIONS SHALL NOT BE MADE DURING INCLEMENT WEATHER. WATER ACCUMULATION IN EXCAVATIONS EXCEEDING 4 INCH SHALL BE PUMPED OUT BEFORE ANY CONCRETE IS PLACED.

16. 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 1926.651 (b) (1) THAT WILL WORK WITH EACH CREW.

17. 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 TPDES CONSTRUCTION GENERAL PERMIT (TXR 150000). THIS PERMIT IS REQUIRED FOR CONSTRUCTION ACTIVITIES INCLUDING CLEARING, GRADING, AND EXCAVATION ACTIVITIES THAT DISTURB GREATER THAN 5 ACRES TOTAL LAND AREA.

18. CONTRACTOR SHALL MARK ALL AS-BUILT CONDITIONS FOR UTILITIES AND STORM SEWER ON THE PLAN AND SUBMIT TO THE ENGINEER AT END OF PROJECT.

19. THE CONTRACTOR SHALL VISIT THE PROJECT SITE IN ORDER TO BECOME FAMILIAR WITH THE SITE CONDITIONS PRIOR TO COMMENCEMENT OF ANY WORK. THE CONTRACTOR IS TO RESEARCH THE EXISTING CONDITIONS AND PROPOSED WORK TO BECOME FULLY AWARE OF THE EXTENT OF THE WORK. THE CONTRACTOR WILL BE REQUIRED TO ACQUIRE ALL NECESSARY PERMITS AND PAY ASSOCIATED FEES.

20. 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.

21. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND OTHER REGULATIONS WITH REGARD TO EXISTING UNDERGROUND UTILITIES, PIPELINES, AND OTHER FACILITIES A MINIMUM OF 48 HOURS IN ADVANCE OF CONSTRUCTION.

22. 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 REPAIR 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 CONFLICT.

23. 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 217, 217.53 (D) SEPARATION DISTANCES BETWEEN PUBLIC WATER SUPPLY PIPES AND WASTE WATER COLLECTION SYSTEM PIPES OR MANHOLES.

24. DURING THE COURSE OF CONSTRUCTION, THE CONTRACTOR MAY ENCOUNTER EXISTING PIPES WHICH ARE NO LONGER IN USE OR WHICH ARE NOT IDENTIFIED ON THE PLANS. THE CONTRACTOR SHALL OBTAIN PROVE 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. AFFECTED 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.

25. TRENCH EXCAVATION SHALL NOT PRECEDE BACKFILL BY MORE THAN 200 FEET. NO TRENCH SHALL BE LEFT OPEN AFTER NORMAL WORKING HOURS.

26. PRIOR TO THE COMMENCEMENT OF ANY WORK AT PROJECT SITE, CONTRACTOR SHALL VERIFY WITH CITY THAT PROPOSED CONSTRUCTION METHODS WILL NOT INTERFERE OR IMPEDE DAILY ACTIVITY OF ANY CITY OR OWNER FACILITY LOCATED IN THIS SITE.

27. 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.

28. CONTRACTOR SHALL BACKFILL ALL VOIDS LEFT BY DEMOLITION AND COMPACT IN A MANNER SUITABLE TO FINAL IMPROVEMENTS.

29. ALL DEMOLISHED MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE PROMPTLY REMOVED FROM THE SITE UNLESS NOTED OTHERWISE ON THE DRAWINGS.

30. ANY DAMAGE TO EXISTING DRAINAGE, PRIVATE UTILITY, OR OTHER STRUCTURES SHALL BE REPAIRED TO PRE-CONSTRUCTION CONDITION AT CONTRACTOR'S EXPENSE.

31. ALL OFFICIALS SHALL BE ENCLOSED WITH ANY OTHER SENCE AT ALL TIMES.

32. EXCESS EXCAVATED MATERIAL, MUCH VEGETATION, BROKEN CONCRETE, OR 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.

33. 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/ENGINEER 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.

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 CONTRACTOR.

35. 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, HMAAC, EMBANKMENT, ETC.) SHALL BE SUBMITTED TO THE ENGINEER WITHIN 7 DAYS FOLLOWING INSTALLATION OF THE MATERIAL.

36. CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN FOR APPROVAL AND SHALL NOTIFY TO THE CITY A MINIMUM OF 72 HOURS IN ADVANCE OF THE COMMENCEMENT OF CONSTRUCTION. 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 TYPOT 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.

37. 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:

DIG TESS.....	(800) 344-8377
TEXAS ONE CALL SYSTEM.....	(800) 245-4545
TEXAS EXCAVATION SAFETY SYSTEM.....	(800) 344-8377
LONE STAR NOTIFICATION COMPANY.....	(800) 669-8344
SOUTHWESTERN BELL LOCATE GROUP.....	(800) 828-5127
AMERICAN ELECTRIC POWER (AEP) TEXAS.....	(877) 373-4658
CITY OF CORPUS CHRISTI PUBLIC WORKS.....	(361) 387-4549

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

1. MATERIAL FOR THE SANITARY SEWER PIPE SHALL BE SDR 26 PVC MEETING THE REQUIREMENTS OF ASTM D3034.
2. ALL LINES SHALL HAVE PUSH - ON COMPRESSION GASKET JOINTS IN ACCORDANCE WITH ASTM D-3212.
3. THE TRENCH EXCAVATIONS SHALL BE AT LEAST 2' WIDER THAN THE SANITARY SEWER LINE. UNLESS OTHERWISE NOTED, THE SANITARY SEWER LINE SHALL BE FULLY ENCASED AND SURROUNDED BY STABILIZED SAND - THE BEDDING THICKNESS SHALL BE 6" BELOW THE PIPE, 12" ON THE SIDES OF THE PIPE, AND ABOVE THE PIPE. SELECT NATIVE SITE SOIL SHALL BE USED FOR TRENCH BACKFILL ABOVE THE BEDDING. TRENCH BACKFILL SHALL BE COMPACTED TO 90% OF STANDARD PROCTOR IN ACCORDANCE WITH ASTM D698 AT MOISTURE CONTENTS - 1% TO + 3% OF OPTIMUM, IF NO PAYEMENT IS FOUND DIRECTLY ABOVE LINE INSTALLATION.

5. SANITARY SEWER LINES SHALL BE AIR TESTED AND DEFLECTION TESTED PRIOR TO APPROVAL. A REPRESENTATIVE OF THE SERVICE PROVIDER AND ENGINEER SHALL BE PRESENT FOR ALL TESTS. THE CONTRACTOR SHALL PERFORM DEFLECTION TESTING ON THE COMPLETED SANITARY SEWER SYSTEM. THE TEST SHALL BE CONDUCTED IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS:
 - a. THE TEST SHALL BE ACCOMPLISHED USING A MANHOLE HAVING A DIAMETER EQUAL TO 95% OF THE INSIDE PIPE DIAMETER. THE MANHOLE SHALL BE PULLED THROUGH THE PIPE WITHOUT THE USE OF MECHANICAL A DEVICE.
 - b. A LOW PRESSURE AIR TEST SHALL BE PERFORMED ON THE SANITARY SEWER LINES BETWEEN TWO CONSECUTIVE MANHOLES IN ACCORDANCE WITH ASTM C826. MANHOLES SHALL ALSO BE TESTED FOR LEAKS EITHER BY PERFORMING A WATER LEAKAGE TEST OR A VACUUM TEST.
 - c. NEITHER BLUE PVC PIPE NOR DUCTILE IRON PIPE SHALL BE USED FOR SANITARY SEWERS.
6. WHERE NEARLY SANITARY SEWERS ARE TO BE PLACED ADJACENT TO AN EXISTING WATERLINE AT A LATERAL CLEARANCE OF LESS THAN NINE FEET, THAT SECTION OF SEWER SHALL BE AT LEAST 150 POUNDS PER SQUARE INCH (PSI) PRESSURE RATED PVC, AWWA C900-DR25 NON-BLUE COLORED.

1. THE CONTRACTOR SHALL COMPLY WITH THE LATEST EDITION OF CITY OF CORPUS CHRISTI STANDARDS AND TCEQ.
2. THE CONTRACTOR SHALL COORDINATE WITH CITY OF CORPUS CHRISTI PUBLIC WORKS FOR WATER TIE-INS.
3. WATER METERS SHALL BE ACCESSIBLE DURING CONSTRUCTION.
4. WATERLINES SHALL BE PLACED TO DEPTH TO MEET CITY STANDARDS AND TCEQ. WATERLINE MINIMUM COVER REQUIREMENTS ON WATER DETAIL SHEETS, HOWEVER, DUE TO CONFLICTS IT MAY BE NECESSARY TO PLACE THE LINE DEEPER AT THESE LOCATIONS; IT IS NOT INTENDED THAT THE LINES BE PLACED AT THESE DEPTHS FOR LONG DISTANCES. THESE DEPTHS ARE TYPICALLY TO BE ATTAINED BY VERTICAL OFFSETS WITH BENDS AND EXTEND SHORT DISTANCE. THIS SHALL BE COORDINATED WITH THE ENGINEER.
5. CONNECTIONS TO THE EXISTING WATERLINE WILL BE PAID BY CONTRACTOR.
 - A. ANY CONNECTION TO EXISTING WATERLINES SHALL BE COORDINATED WITH THE CITY WATER DEPARTMENT.
 - B. THE CONTRACTOR SHALL NOT BE OPERATING EXISTING VALVES WITHOUT PRIOR PERMISSION FROM THE CITY.
 - C. UNLESS OTHERWISE NOTED, NEW WATERLINE SHALL BE PVC METEED THESE MINIMUM REQUIREMENTS:
 1. 1.5 IN THROUGH 3 IN, ASTM D2241, SR 26
 2. 4 IN THROUGH 12 IN, AWWA C900, DR 18
 3. 14 IN THROUGH 36 IN, AWWA C905, DR 18
 - D. ALL LINES SHALL HAVE PUSH-ON COMPRESSION GASKET JOINTS.
 - E. CONTRACTOR SHALL RESTRAIN THE WATER LINE UTILIZING A MECHANICAL RESTRAINT SYSTEM. ALL BENDS, FITTINGS, CHANGES IN DIRECTION, OR OTHER PIPE CONFIGURATIONS SHALL BE SERIES 1300 OR 1350 UNI-FLANGE BLOCK BUSTER RESTRAINT DEVICES BY FORD OR ENGINEER APPROVED SUBSTITUTE.
 - F. THE METER ASSEMBLY SHALL BE INSTALLED BY THE CITY IN CONJUNCTION WITH THE CONTRACTOR.
 - G. WHERE SANITARY SEWER AND WATER LINES CROSS, THE WATERLINE SHALL BE PLACED OVER THE SEWER WITH A MINIMUM SEPARATION OF 2 FEET. IF THIS IS NOT POSSIBLE, EITHER THE SEWER OR THE WATERLINE SHALL BE CEASED WITH A STANDARD 18 FOOT LENGTH OF A LARGER SIZE PIPE.
 - H. WATERLINES SHALL BE PLACED 36" BELOW FINAL GRADE UNLESS NOTED OTHERWISE. EXISTING WATERLINES TO BE ADJUSTED WHERE NECESSARY. HOWEVER, AT PLACE CROSSINGS, IT MAY BE NECESSARY TO PLACE WATERLINES DEEPER. THE CONTRACTOR SHALL ENSURE THAT MINIMUM COVER IS MAINTAINED WHEN WATERLINES ARE INSTALLED UNDER DRAINAGE DITCHES.
6. NEW WATERLINES SHALL BE PRESSURE TESTED, DISINFECTED, AND SHALL PASS TWO BACTERIOLOGICAL TESTS PRIOR TO BEING PLACED INTO SERVICE. PRESSURE TESTING AGAINST EQUIPMENT, FITTINGS, METERS, VALVES, BACK-FLOW PREVENTORS, ETC., REQUIRED TO COMPLETE THE TEST. AT THE OPTION OF THE CONTRACTOR, IF REQUIRED FOR THE FINAL TIE-IN, THE CONTRACTOR SHALL PROVIDE ONE AT HIS COST. ALL REQUIRED TESTING SHALL BE PAID BY TO THE ENGINEER. A REPRESENTATIVE OF THE THE OWNER AND THE ENGINEER SHALL BE PRESENT FOR ALL TESTS.
7. WATER FOR WATERLINE TESTING MAY BE PURCHASED FROM THE WATER SUPPLIER. CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE PURCHASE OF THE WATER.
8. THE TRENCH EXCAVATIONS SHALL BE AT LEAST 2' WIDER THAN THE WATERLINE. UNLESS OTHERWISE NOTED, THE WATERLINE SHALL BE FULLY ENCASED AND SURROUNDED BY A MINIMUM OF 12" OF BEDDING THICKNESS SHALL BE 6" BELOW THE PIPE, 12" ON THE TOP, AND 12" ON THE SIDES OF THE PIPE AND 18" ON THE BOTTOM. THE BEDDING SHALL BE USED FOR TRENCH BACKFILL ABOVE THE BEDDING. TRENCH BACKFILL SHALL BE COMPACTED TO 90% OF STANDARD PROCTOR IN ACCORDANCE WITH ASTM D6988 AT MOISTURE CONTENTS -1% TO +3% OF OPTIMUM.
9. ALL VALVES REQUIRING ADJUSTMENT SHALL BE LOCATED BY DIMENSIONS TIED TO EXISTING FEATURES THAT FILL REMAIN IN PLACE. NEW VALVES AND EXISTING FIRE HYDRANT SHALL BE EXTENDED TO FINISH GRADE.
10. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS TO PROTECT EXISTING UTILITIES. ALL PIPES AND UTILITIES DAMAGED BY THE CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR.
11. ALL MATERIAL AND LABOR FOR THE ADJUSTMENT TO FINISH GRADE OF VALVE BOXES SHALL BE FURNISHED BY THE CONTRACTOR AND NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK.

1. 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.
2. BEFORE EXCAVATION HAS BEGUN, STRIP THE TOP 12" OF TOPSOIL FROM AREAS TO BE EXCAVATED OR OCCUPIED BY BUILDING, ROADS, WALKS, ETC., AND FILL 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 FINEST GRADING.
3. 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.
4. 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.
5. KEEP ALL EXCAVATIONS DRY BY DIVERTING OR PUMPING SEEPAGE OR SURFACE WATER FROM EXCAVATIONS.
6. CONSTRUCT 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.
7. IN ORDER TO ACCOMMODATE ANY ADJUSTMENTS THAT MIGHT BE REQUIRED AS PART OF THE FOUNDATION BID PACKAGE, PLACEMENT OF SELECT NON-EXPANSIVE FILL UNDER THE BUILDING WILL NOT BE ALLOWED TO START UNTIL AFTER THE FOUNDATION BID PACKAGE IS RELEASED FOR CONSTRUCTION. SELECT NON-EXPANSIVE FILL MATERIAL SHALL CONFORM TO ANY ONE OF THE FOLLOWING SPECIFICATIONS:
 - A. 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".
OR
 - B. SELECT NON-EXPANSIVE FILL SHALL CONFORM TO TxDOT ITEM 247, FLEXIBLE BASE, TYPE A, GRADES 1 OR 2.
OR
 - C. 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.
8. COMPLETE ALL GRADING NECESSARY TO BRING THE ENTIRE AREA SHOWN ON THE DRAWINGS OUTSIDE OF THE BUILDING 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.
9. THE TOP 12" OF EXCAVATED AREAS, FILL AREAS AND OTHER DISTURBED AREAS OUTSIDE OF THE BUILDING, PAVING, SIDEWALKS, ETC., SHALL BE TOP SOIL. STRIP TO THE ELEVATIONS SHOWN ON THE PLANS. GRADE THE TOP SOIL WITH HAND TOOLS, RAKE TO A FINE, EVEN SURFACE AND LEAVE IN CONDITION FOR SEEDING AND/OR SODDING.
10. STRIPPING TOP SOIL FROM FILL AREAS THAT ARE NOT UNDER BUILDINGS, ROADS, 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 -2% TO $+3\%$ OF OPTIMUM.
11. PAVEMENT MATERIALS, THICKNESS AND INSTALLATION SHALL BE AS SHOWN ON THE PLANS AND DETAILS.
12. THE PAINT FOR PAVEMENT MARKINGS SHALL MEET THE REQUIREMENTS OF FED SPEC TT-P-85. THE PAINT MAY BE USED WITH OR WITHOUT REFLECTIVE MEDIA. THE PAINTING SHALL BE PERFORMED ONLY WHEN ALL OF THE FOLLOWING CONDITIONS ARE SATISFIED:
 - A. THE EXISTING SURFACE IS DRY OR NEARLY DRY.
 - B. WHEN THE ATMOSPHERIC TEMPERATURE IS 40°F AND RISING
 - C. WHEN THE WEATHER IS NOT EXCESSIVELY WINDY, DUSTY, OR FOGGY
13. A MINIMUM OF 28-DAYS SHALL ELAPSE BETWEEN THE PLACEMENT OF THE ASPHALT OR CONCRETE SURFACE AND THE APPLICATION OF THE PAVEMENT PAINT/MARKINGS. THE PAINT SHALL NOT BLEED EXCESSIVELY, CURL, OR DISCOLOR WHEN APPLIED TO ASPHALT SURFACES.

A. CONCRETE:
PAVEMENT SHALL BE 7" THICK MINIMUM (UNLESS OTHERWISE NOTED) WITH #4 BARS @ 12" OCW (4000 PSI) SUPPORTED BY 2" OF LEVELING SAND (OPTIONAL) ON 8" OF LIME STABILIZED SUBGRADE.

B. ASPHALT:
PAVEMENT SHALL BE 2 1/2" HMAAC (TYPE D), PRIME COAT (MC30) SUPPORTED BY 12" CRUSHED LIMESTONE ON 8" OF LIME STABILIZED SUBGRADE.

1. PRIOR TO PLACEMENT OF CRUSHED LIMESTONE BASE, THE TOP 6" OF SUBGRADE SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY (ASTM D-698).

2. BASE MATERIAL SHALL BE TYPE A GRADE 1 CRUSHED LIMESTONE, IN ACCORDANCE WITH TxDOT STANDARD SPECIFICATION (2004) ITEM 247.

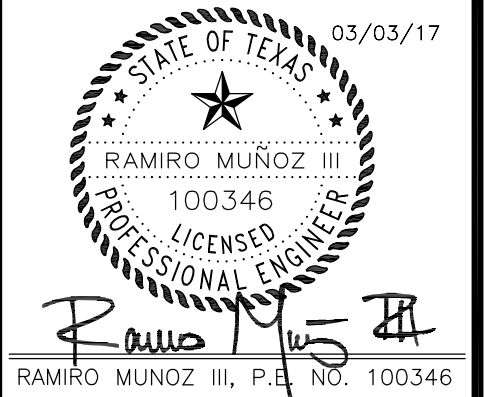
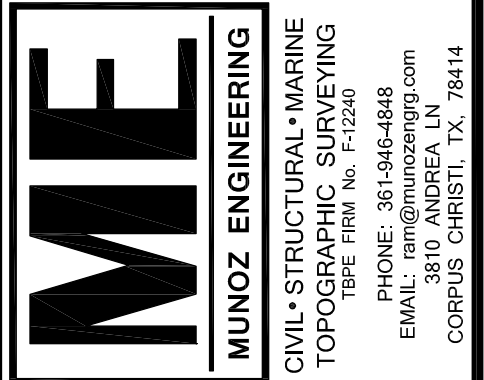
3. BASE MATERIAL SHALL BE COMPACTED TO A MINIMUM OF 98% STANDARD PROCTOR DENSITY (ASTM D-698) AT ±3% OPTIMUM MOISTURE CONTENT.

4. 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.
5. SUBMIT GRADATION, ATTERBERG LIMITS, AND MOISTURE DENSITY CURVES FOR EACH TYPE OF EXISTING SUBGRADE ENCOUNTERED AND FOR EACH TYPE OF FILL MATERIAL USED.
6. SUBMIT MIX DESIGNS WITH TEST DATA FOR EACH TYPE AND STRENGTH OF CONCRETE SPECIFIED.
7. 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 REINFORCEMENT SCHEDULE. THE SHOP DRAWINGS SHALL PROVIDE SUFFICIENT DETAIL TO PERMIT FABRICATING THE REINFORCEMENT WITHOUT THE USE OF FIELD DESIGN DRAWINGS.
8. SUBMIT DESCRIPTIVE LITERATURE, BULLETINS, TECHNICAL DATA SHEETS, MATERIAL SAFETY DATA SHEETS, AND INSTALLATION INSTRUCTIONS FOR THE WATERLINES, STORM SEWER PIPES, SANITARY SEWER LINES, INLET BOXES, MANHOLES, GRATING, PRECAST ITEMS, PREFABRICATED ITEMS, GAS LINES, POWER AND COMMUNICATIONS CABLEING, 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 THE MANUFACTURER. THE USER SHALL BE RESPONSIBLE FOR VERIFYING THAT THE PRODUCT MEETS ALL APPLICABLE DESIGN CONDITIONS AND CONFORMS TO GOVERNING CODE REQUIREMENTS.
9. 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.

1. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ALL TRAFFIC CONTROL DEVICES DURING THE COURSE OF CONSTRUCTION.
2. EQUIPMENT AND MATERIALS SHALL NOT BE STORED ON PUBLIC RIGHT-OF-WAY DURING THE COURSE OF CONSTRUCTION. ANY MATERIAL AND EQUIPMENT APPROVED BY THE CITY ENGINEER FOR TEMPORARY PLACEMENT ALONG THE PUBLIC RIGHT-OF-WAY SHALL BE ADEQUATELY BARRICADED AS REQUIRED FOR EACH DIRECTION OF TRAVEL.
3. CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE OF ALL SIGNS REQUIRED IN THE TRAFFIC CONTROL PLAN. DAMAGE OR LOSS OF ANY REGULATORY SIGNS OR WARNING SIGNS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CITY ENGINEER FOR SIGN REPAIRS. THE CITY FOR ALL COSTS INCURRED FOR SIGN MAINTENANCE IF THE CONTRACTOR DOES NOT PROMPTLY REPLACE SIGNS.
4. FOLLOWING CONSTRUCTION, ALL CITY TRAFFIC SIGNS FOUND TO BE DAMAGED, MISSING OR IMPROPERLY PLACED SHALL BE REPLACED AND RESTORED BY THE CONTRACTOR AT THE CONTRACTORS EXPENSE.
5. THE CONTRACTOR SHALL PROVIDE ALL WEATHER ACCESS TO ALL RESIDENTS AND BUSINESS AT ALL TIMES DURING CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE TEMPORARY DRIVEWAYS AND/OR ROADS WITH APPROVED INTERLOCKED CONCRETE PAVING.
6. ALL SIGNS AND BARRICADES USED SHALL BE REFLECTORIZED AND SHALL BE EQUIPPED WITH FLASHING WARNING LIGHTS AS REQUIRED BY TxDOT WORK ZONE TRAFFIC CONTROL.

TESTING SCHEDULE			
DESCRIPTION		RATE	
DENSITIES:		ATTERBERG LIMITS AND GRADATION:	
COMPACTED EMBANKMENT	MIN 1 PER 500 SY PER 12" LIFT	CALICHE (IF UTILIZED)	1 PER 5,000 CY OF MATERIAL
BUILDING PAD SUBGRADE	1 PER 4,000 SF		
BUILDING PAD SELECT FILL	1 PER 4,000 SF PER 12" COMPACTED LIFTS	LOS ANGELES ABRASION LOSS:	
STABILIZED SUBGRADE	MINIMUM 1 PER 500 SY OF PAVING	LIMESTONE BASE	1 PER 5,000 CY OF MATERIAL
UTILITY TRENCH BACKFILL	AS REQ'D (MIN 1 PER 12" LIFT/200 LF)		
		HOT MIX CONTROL:	
PROCTORS (MOISTURE - DENSITY RELATIONSHIPS):		SURFACE COURSE DESIGN	FURNISHED BY SUPPLIER
RAW SITE MATERIAL	1 UNLESS MATERIAL CHANGES	LAB SITE SAMPLING, MOLDING, LAB, DENSITY, STABILITY,	
COMPACTED EMBANKMENT	1 UNLESS MATERIAL CHANGES	MAX. THEO. SPECIFIC GRAVITY (RICE GRAVITY) AND EXTRACTION	1 PER PROJECT OR 500 TONS
LIMESTONE BASE	1 UNLESS MATERIAL CHANGES	CORED IN-PLACE DENSITY AIR VOIDS, THICKNESS OF COMPACTED MIX	1 PER 2,500 SY
SELECT FILL UTILITIES	1 UNLESS MATERIAL CHANGES		
		CONCRETE:	
LIME STABILIZED SUBGRADE:		CURB/GUTTER	1 SET (3) PER 500'
FIELD SIEVE ANALYSIS AFTER FINAL MIXING	1 PER DAY	INLETS	1 SET (3) PER 3 INLETS
EASES & GRIM TEST FOR LIME	1 FOR EACH TYPE SOIL	TRASH DUMPSTER PAD	1 SET (3) PER PAD
STABILIZING AGENT CERTIFICATION	RECEIVE MILL CERTIFICATE FROM SUPPLIER ON	SIDEWALKS	1 SET (3) PER 4,000 SF
	EACH LOAD (STABILIZED SUBGRADE AND BASE)	CONCRETE PAVEMENT	1 SET (3) PER 75 CY
		FOUNDATIONS	1 SET (3) PER 50 CY OR (1) PER DAY

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NO.	DESCRIPTION	BY	CHKD	DATE	
A	ISSUED FOR PERMITTING	RA	RM	2/15	
B	ISSUED FOR PERMITTING	RA	RM	3/17	
SCALE:					
AS NOTED					
DATE:					
JANUARY 2015					



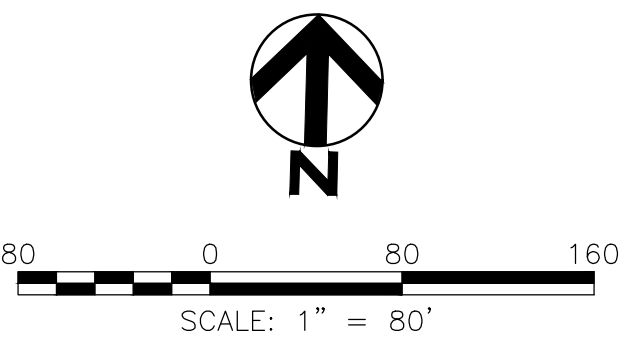
BENCHMARK MATERIALS
718 SOUTH NAVIGATION BOULEVARD
CORPUS CHRISTI, TEXAS

GENERAL CIVIL NOTES

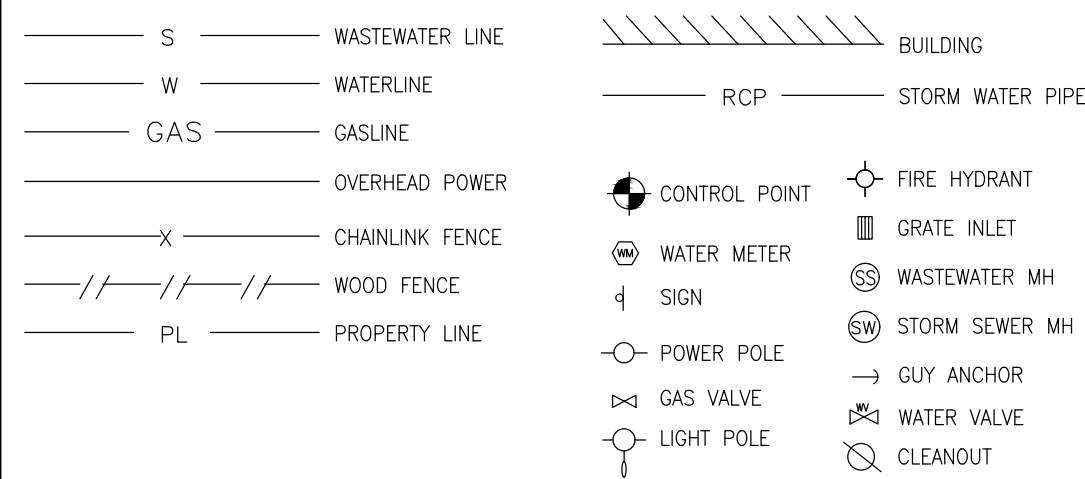
GENERAL CIVIL NOTES

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C1



LEGEND



PARKING REQUIREMENTS

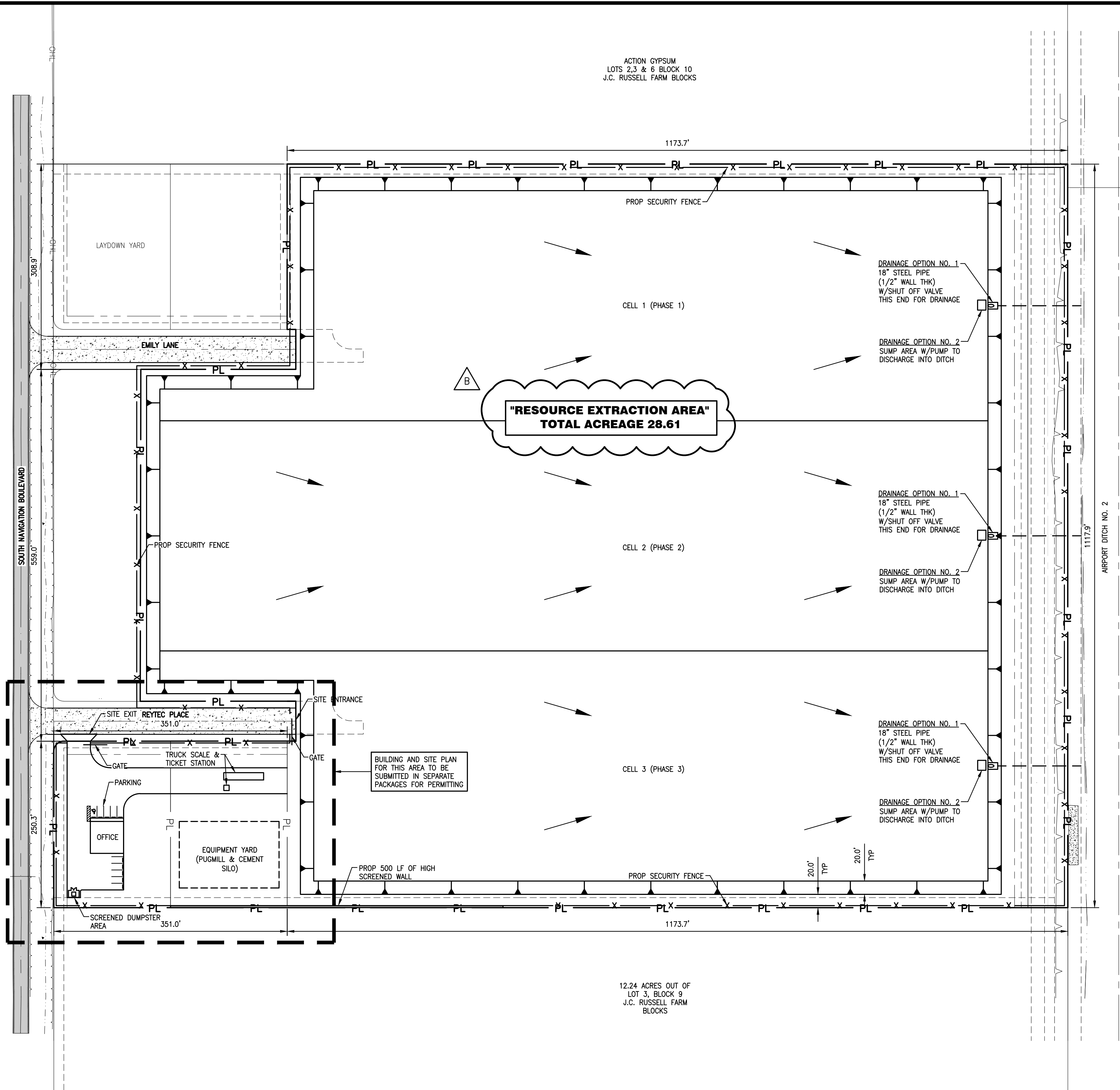
1 SPACE PER 300 SQFT GFA OFFICE SPACE
8 PARKING SPACES REQUIRED
10 PARKING SPACES PROVIDED TOTAL (INCLUDES 1 HANDICAP SPACE)

TRAFFIC FLOW

THERE WILL BE APPROXIMATELY 250 TRUCKS A DAY ENTERING THE SITE

PROJECT NOTES

1. ALL EXCAVATIONS GREATER THAN 20 FEET BELOW GRADE SHALL HAVE AN EXCAVATION PLAN BY A TEXAS LICENSED PROFESSIONAL ENGINEER.
2. AN OSHA TRAINED COMPETENT PERSON SHALL EXAMINE EXCAVATIONS ON A DAILY BASIS OR AFTER AN EVENT. INSPECTION REPORTS AND DAILY LOGS SHALL BE KEPT ON SITE AVAILABLE FOR REVIEW.
3. ALL OSHA AND TCEQ PERMITTING REQUIREMENTS APPLY TO ALL WORK TO BE PERFORMED.
4. CONTRACTOR/OWNER TO MAINTAIN A CLEAN WORK AREA AND ADJACENT ROADWAYS TO BE CLEANED (SWIPE AS NEEDED) PER CITY ORDINANCE.
5. CONTACT ENGINEER IF PROJECT LIMITS CHANGE OR SITE CONDITIONS VARY FROM SUBSURFACE GEOTECHNICAL INVESTIGATION.



R E V I S I O N S				
NO.	DESCRIPTION	BY	CHKD	DATE
A	ISSUED FOR PERMITTING	RA	RM	2/15
B	REVISED EXTRACTION AREA	RA	RM	1/18

DRAWN BY: RA
CHK BY: RM
APP BY: RM
SCALE: AS NOTED
DATE: JANUARY 2015

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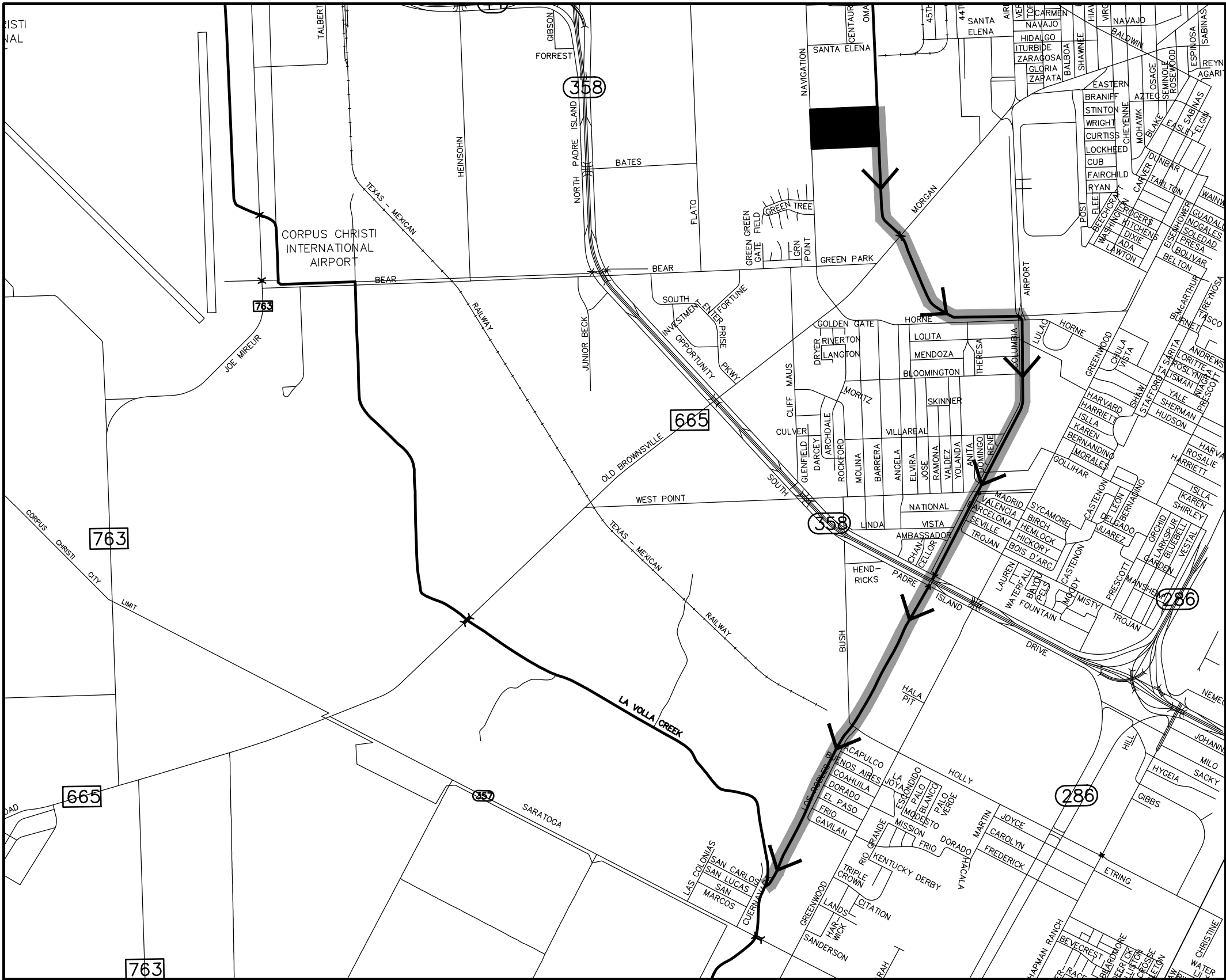
RAMIRO MUÑOZ III, P.E. NO. 100346

BENCHMARK MATERIALS
718 SOUTH NAVIGATION BOULEVARD
CORPUS CHRISTI, TEXAS

SCHEMATIC SITE PLAN

JOB NO.
15BMM019

C2



LOCATION/OUT FALL MAP
SCALE: 1" = 4000'

LEGEND

➤ DIRECTION OF FLOW

STORM WATER NOTES

1. A STORM WATER POLLUTION PREVENTION PLAN WILL BE SUBMITTED WITH CONSTRUCTION PLANS FOR ANY PROJECT OF 1 ACRE OR GREATER/OR A POLLUTION CONTROL PLAN IF LESS THAN 1 ACRE.
2. LOT 1, BLOCK 2, REYTEC INDUSTRIAL PARK
3. THE RECEIVING WATER FOR THE STORM WATER RUNOFF FROM THIS PROPERTY IS THE OSO CREEK. THE TCEQ HAS NOT CLASSIFIED THE AQUATIC LIFE USE FOR THE OSO CREEK, BUT IT IS RECOGNIZED AS AN ENVIRONMENTALLY SENSITIVE AREA. THE OSO CREEK FLOWS DIRECTLY INTO THE OSO BAY. THE TCEQ HAS CLASSIFIED THE AQUATIC LIFE USE FOR THE OSO BAY AS "EXCEPTIONAL" AND "OYSTER WATERS" AND CATEGORIZED THE RECEIVING WATER AS "CONTACT RECREATION" USE.
4. THE SITE DRAINS ON THE SURFACE AND THROUGH AN UNDERGROUND DRAINAGE SYSTEM OUTFALLING AT THE REAR OF THE SUBDIVISION INTO THE AIRPORT DRAINAGE DITCH NO. 2, RUNNING SOUTH TO AIRPORT DRAINAGE DITCH NO. 1, THEN LA VOLLA CREEK ALL THE WAY DOWN INTO THE OSO CREEK.
5. BY GRAPHIC PLATTING ONLY, THIS PROPERTY LIES WITHIN ZONE "C" "AREAS OF MINIMUM FLOODING", OF THE FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NO. 485464 0165 C, DATED JULY 18, 1985.
6. THIS PROPERTY IS ZONED "IL" (LIGHT INDUSTRIAL).
7. TOTAL ACREAGE OF PROJECT AREA EQUALS XXX ACRES.
8. THERE ARE NO KNOWN NATURAL WATER BODIES JURISDICTIONAL WETLANDS, ENDANGERED SPECIES HABITAT, STATE OF TEXAS SUBMERGED LANDS, OR CRITICAL DUNES ON THE SITE.

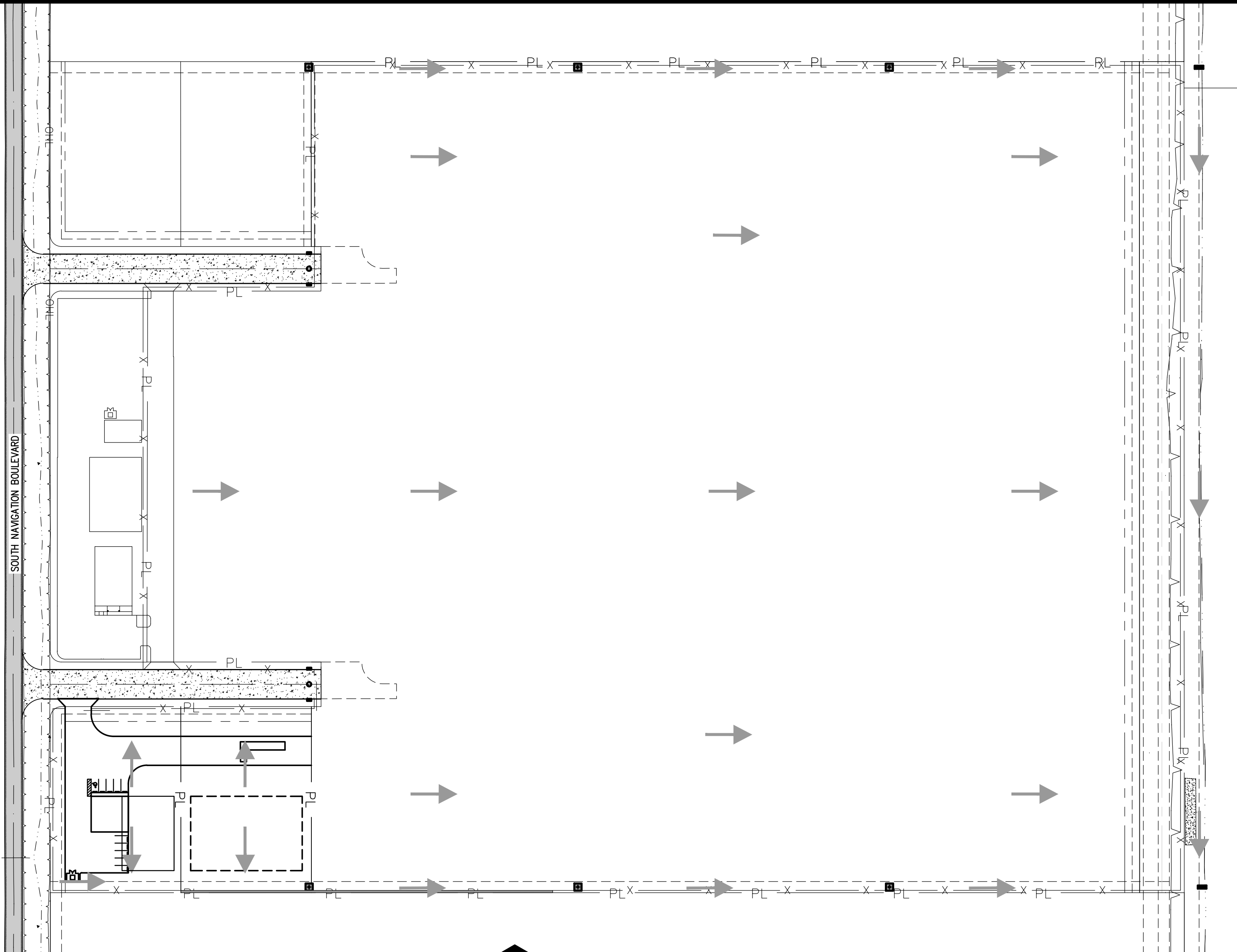
STORM WATER DRAINAGE CALCULATIONS

STORM FREQUENCY DESIGN FOR 5 & 25 YEARS.

THE FOLLOWING RUNOFF COEFFICIENTS (C) FOR RUNOFF AND RAINFALL INTENSITY (i), ARE TAKEN FROM THE CITY OF CORPUS CHRISTI STORM WATER MASTER PLAN "DRAINAGE DESIGN MANUAL" (DRAFT) DATED MARCH 2009.

TC~10.00 MIN
i5=7.72 INCHES/HR
i25=9.85 INCHES/HR

Q=CiA
C=RUNOFF COEFFICIENT
i=RAIN FALL INTENSITY - (INCHES/HR)
A=AREA (ACRES)
Q5=RUN OFF FOR 5 YEAR EVENT (cfs)
Q25=RUN OFF FOR 25 YEAR EVENT (cfs)
COMP = COMPOSITE



SITE MAP
SCALE: 1" = 100'

LEGEND

➤ DIRECTION OF FLOW

PRE-DEVELOPMENT		
TYPE	RUNOFF COEFFICIENT (C)	AREA (ACRES)
CULTIVATED	0.35	32.14
C (COMP) (WEIGHTED VALUE)		0.35

POST-DEVELOPMENT		
TYPE	RUNOFF COEFFICIENT (C)	AREA (ACRES)
CONCRETE	0.90	0.58
GRASS	0.15	0.58
BUILDING	1.00	0.16
CULTIVATED	0.35	30.82
C (COMP) (WEIGHTED VALUE)		0.36

C (COMP)	0.35
Tc(Min)	10
Q=CiA (USING RATIONAL EQUATION)	
I=INTENSITY (IN/HR)	7.72
AREA (ACRES)	32.14
Q ₅ PRE (CFS)	86.84

C (COMP)	0.36
Tc(Min)	10
Q=CiA (USING RATIONAL EQUATION)	
I=INTENSITY (IN/HR)	7.72
AREA (ACRES)	32.14
Q ₅ POST (CFS)	89.32

C (COMP)	0.35
Tc(Min)	10
Q=CiA (USING RATIONAL EQUATION)	
I=INTENSITY (IN/HR)	9.85
AREA (ACRES)	32.14
Q ₂₅ PRE (CFS)	110.80

C (COMP)	0.36
Tc(Min)	10
Q=CiA (USING RATIONAL EQUATION)	
I=INTENSITY (IN/HR)	9.85
AREA (ACRES)	32.14
Q ₂₅ POST (CFS)	113.97

DIFFERENCE BETWEEN PRE AND POST DEVELOPMENT	
(5 YEAR INTENSITY)	(25 YEAR INTENSITY)
Q = 86.84 cfs	Q = 110.80 cfs
Q = 89.32 cfs	Q = 113.97 cfs
Q = 2.48 cfs *	Q = 3.17 cfs *
* ADDITIONALLY, INCREASE TO THE SITE IS NEGLIGIBLE, THE FLOW FOR THE AREA WITH THE SLIGHT INCREASE WILL BE CONTROLLED USING THE RCP PIPE DRAINING THE SITE.	

REVISIONS

NO.	DESCRIPTION	BY	CHKD	DATE
A <td>ISSUED FOR PERMITTING<td>RA<td>RM<td>2/15</td></td></td></td>	ISSUED FOR PERMITTING <td>RA<td>RM<td>2/15</td></td></td>	RA <td>RM<td>2/15</td></td>	RM <td>2/15</td>	2/15
B <td>REVISED EXTRACTION AREA<td>RA<td>RM<td>1/18</td></td></td></td>	REVISED EXTRACTION AREA <td>RA<td>RM<td>1/18</td></td></td>	RA <td>RM<td>1/18</td></td>	RM <td>1/18</td>	1/18

DRAWN BY: RA

CHK BY: RM

APP BY: RM

SCALE: AS NOTED

DATE: JANUARY 2015

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STATE OF TEXAS

01/26/18

RAMIRO MUNOZ III

100346

LICENSED PROFESSIONAL ENGINEER

RAMIRO MUNOZ III, P.E. NO. 100346

BENCHMARK MATERIALS

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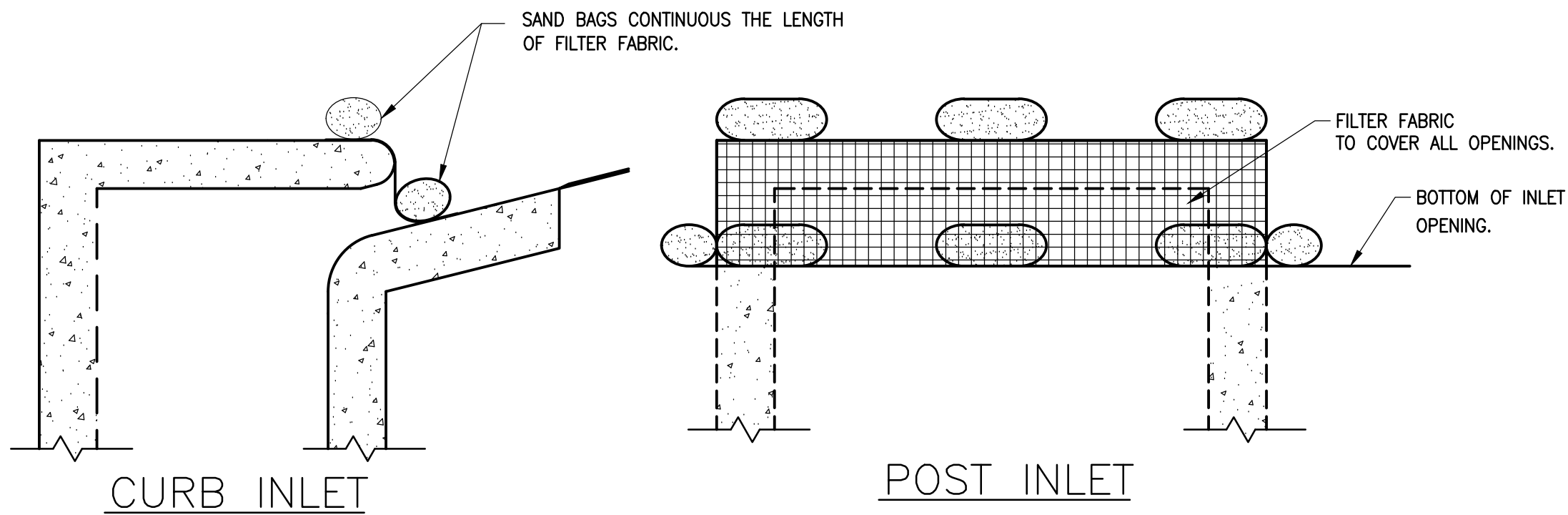
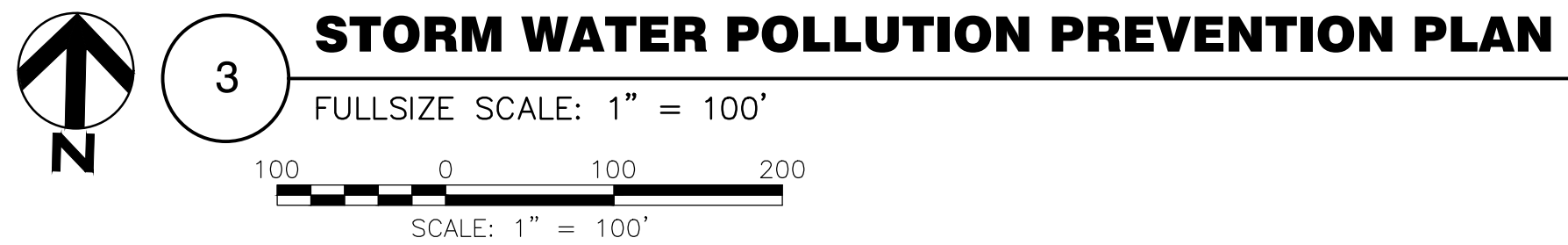
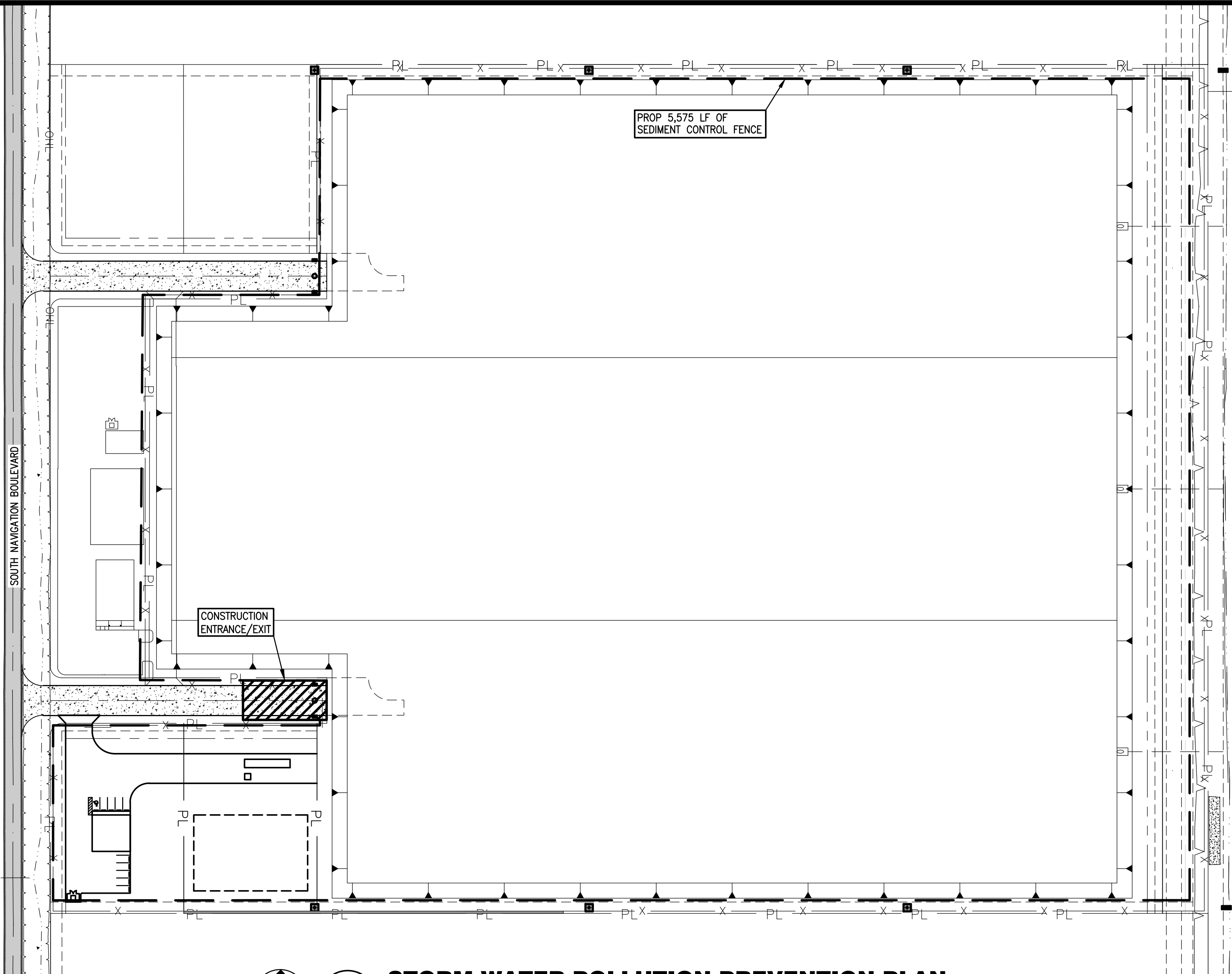
CORPUS CHRISTI, TEXAS

STORM WATER POLLUTION PREVENTION PLAN

JOB NO.
15BMM019

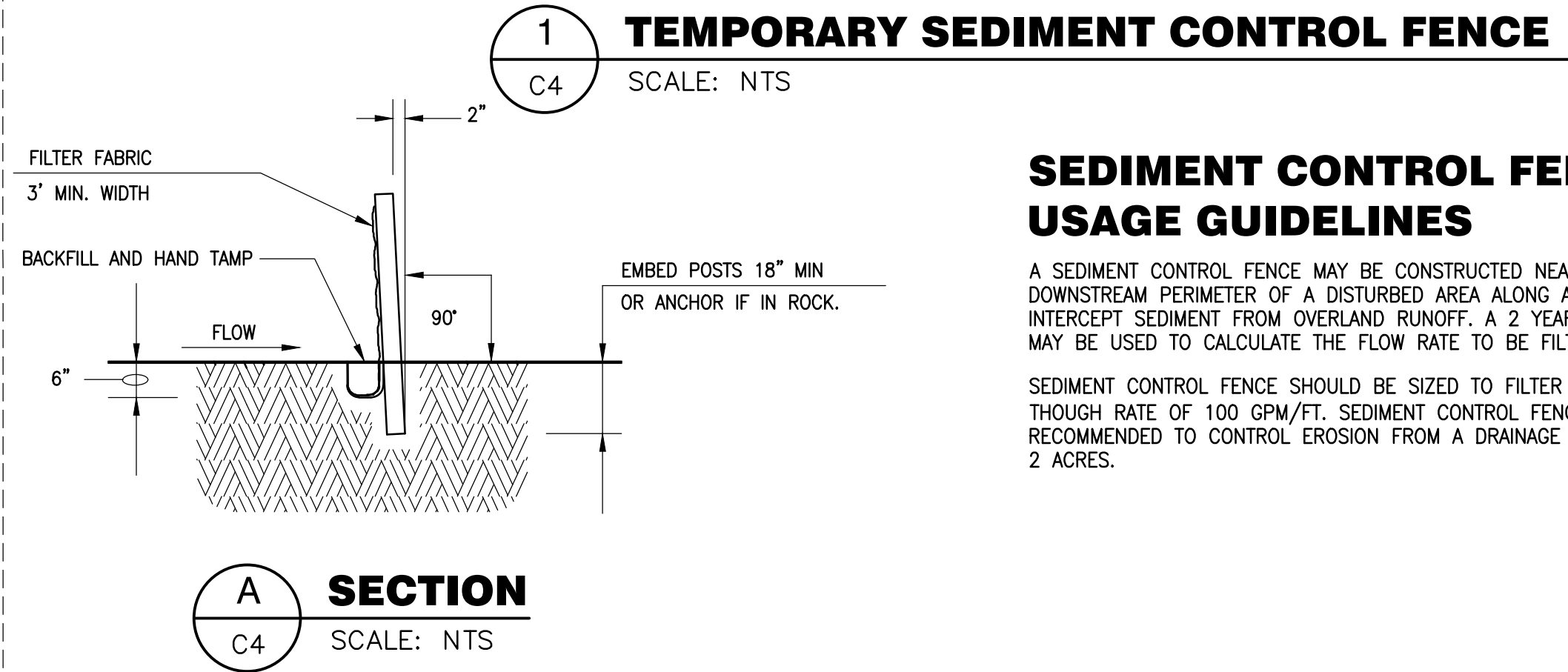
C3

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ALL CURB, POST AND GATE INLETS WITHIN THE CONSTRUCTION AREA SHALL HAVE TEMPORARY SEDIMENT CONTROL.

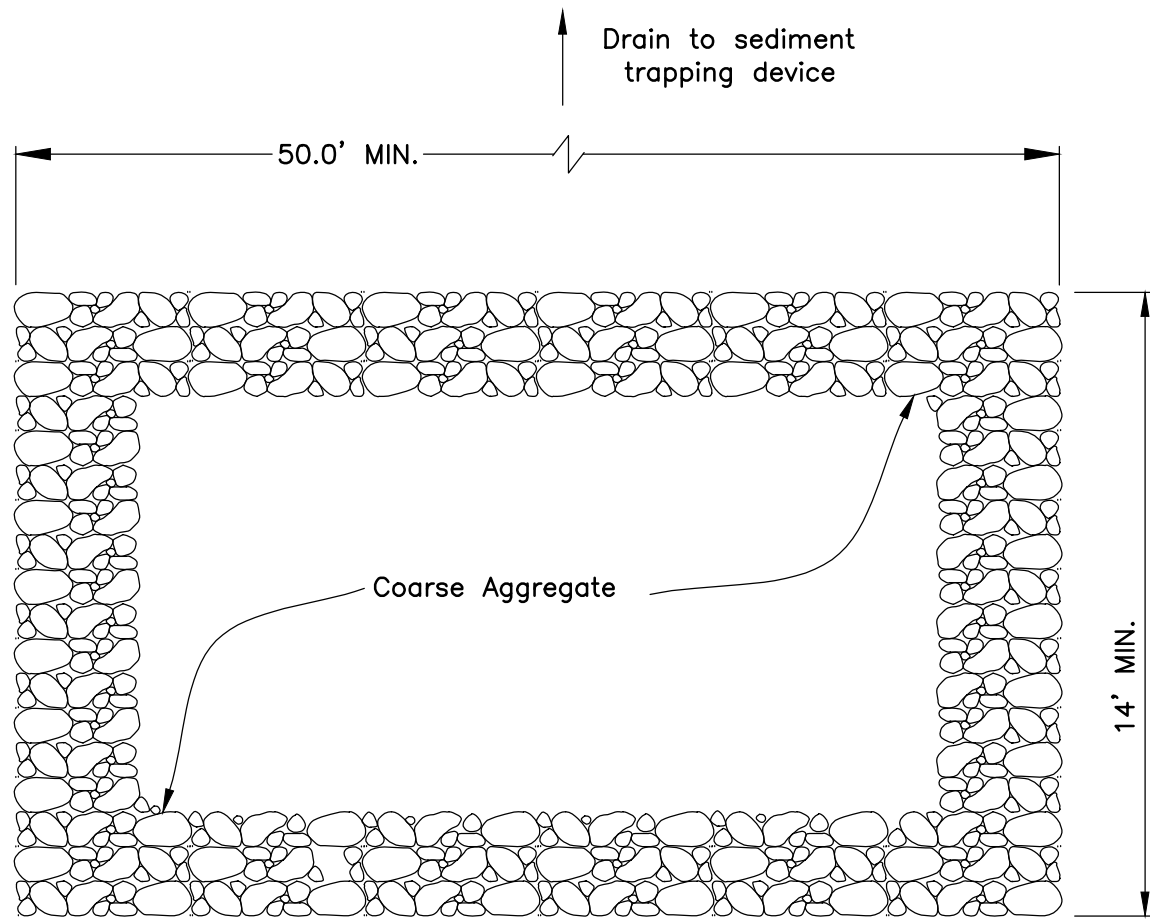
2 **TEMPORARY SEDIMENT CONTROL FOR INLETS**
SCALE: NTS



SEDIMENT CONTROL FENCE USAGE GUIDELINES

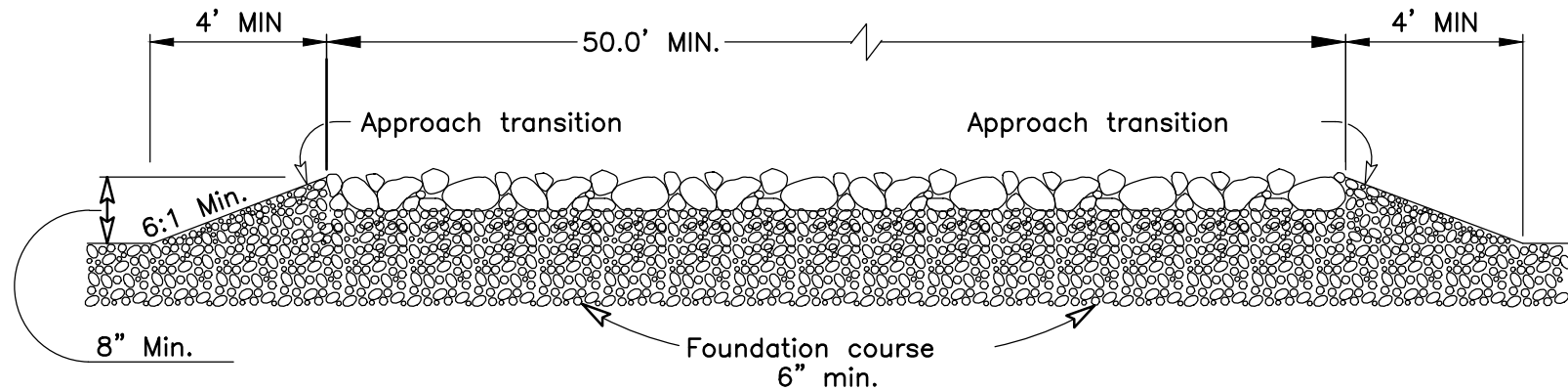
A SEDIMENT CONTROL FENCE MAY BE CONSTRUCTED NEAR THE DOWNSTREAM PERIMETER OF A DISTURBED AREA ALONG A CONTOUR TO INTERCEPT SEDIMENT FROM OVERLAND RUNOFF. A 2 YEAR STORM FREQUENCY MAY BE USED TO CALCULATE THE FLOW RATE TO BE FILTERED.

SEDIMENT CONTROL FENCE SHOULD BE SIZED TO FILTER A MAX. FLOW THOUGH RATE OF 100 GPM/FT. SEDIMENT CONTROL FENCE IS NOT RECOMMENDED TO CONTROL EROSION FROM A DRAINAGE AREA LARGER THAN 2 ACRES.



3 **TYPICAL STABILIZED CONSTRUCTION ENTRANCE/EXIT**
SCALE: NTS

- STABILIZED CONSTRUCTION ENTRANCE/EXIT NOTES**
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 ODR.
 4. THE CONSTRUCTION EXIT FOUNDATION COURSE SHALL BE FLEXIBLE BASE, BITUMINOUS CONCRETE, PORTLAND CEMENT CONCRETE OR OTHER MATERIAL AS APPROVED BY THE ODR.
 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 ODR.



BY		CHKD	DATE
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JANUARY 2015			

DRAWN BY: RA	CHK BY: RM	APP BY: RM	SCALE: AS NOTED	DATE: JANUARY 2015
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