NBU NOTES

- 1. THE ENGINEER OF RECORD ACKNOWLEDGES THAT ALL PROPOSED WATER OR WASTEWATER IMPROVEMENTS MUST COMPLY WITH TCEQ, CITY OF NEW BRAUNFELS, W&WW DESIGN CRITERIA, SOUND ENGINEERING JUDGMENT, AND ANY OTHER GOVERNING ENTITY ORDINANCES OR
- CODES. 2. THE ENGINEER OF RECORD ACKNOWLEDGES THAT THE POINT OF DELIVERY FOR THE NBU WATER SYSTEM IS THE MAIN SIDE OF THE SERVICE/LATERAL/LEAD FROM THE CUSTOMER'S METER/BACKFLOW/EASEMENT EDGE. THE CUSTOMER IS RESPONSIBLE FOR DESIGN, CONSTRUCTION, OPERATION AND MAINTENANCE BEYOND THE POINT OF DELIVERY AND HAS SOLE CONTROL AND SUPERVISION OVER THE CUSTOMER'S INSTALLATION INCLUDING REVIEW, PERMITTING, AND COMPLIANCE WITH ALL CITY PLUMBING CODES OR OTHER APPLICABLE CODES.
- 3. THE ENGINEER OF RECORD ACKNOWLEDGES THAT THE POINT OF DELIVERY FOR AN NBU WASTEWATER SYSTEM IS THE MAIN SIDE OF THE SERVICE LATERAL FROM THE CUSTOMER'S CLEAN OUT OR PROPERTY LINE WHICH EVER IS NEARER. THE CUSTOMER IS RESPONSIBLE FOR DESIGN, CONSTRUCTION, OPERATION AND MAINTENANCE BEYOND THE POINT OF DELIVERY AND HAS SOLE CONTROL AND SUPERVISION OVER THE CUSTOMER'S INSTALLATION INCLUDING REVIEW, PERMITTING AND COMPLIANCE WITH ALL CITY PLUMBING CODES AND OTHER CODES AS
- APPLICABLE.
 WATER IS A PRECIOUS COMMODITY IN THE STATE OF TEXAS AND NEW BRAUNFELS UTILITIES (NBU) IS PASSIONATE ABOUT PROTECTING THE LOCAL RESOURCE. NBU'S CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ACQUIRING A FIRE HYDRANT METER SO THAT ALL WATER USED FOR CONSTRUCTION OR TESTING PURPOSES ARE PROPERLY ACCOUNTED FOR. NBU WILL NOT TOLERATE ANY WATER THEFT, REGARDLESS OF THE AMOUNT. IF WATER THEFT IS DISCOVERED THE CONTRACTOR SHALL BE SUBJECT TO MONETARY PENALTIES, CRIMINAL CHARGES, AND STOPPAGE OF ALL CONSTRUCTION ACTIVITIES RELATED TO THE PROJECT. COSTS ASSOCIATED WITH ANY WORK STOPPAGE RESULTING FROM WATER THEFT SHALL BE AT THE FULL EXPENSE OF THE CONTRACTOR.
- 5. ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER OF RECORD. IN ACCEPTING THESE PLANS, NEW BRAUNFELS UTILITIES MUST RELY UPON THE ADEQUACY OF THE WORK OF THE ENGINEER OF RECORD.

NBU AS-BUILT REQUIREMENTS

NBU REQUIRES GPS POINTS FOR CERTAIN ELECTRIC, WATER AND WASTEWATER ATTRIBUTES, SOME OF WHICH MUST BE TAKEN PRIOR TO BACKFILL DURING CONSTRUCTION.

GPS POINTS SHALL BE REQUIRED FROM THE DEVELOPERS CONTRACTOR OR ENGINEER. A MINIMUM OF THREE COORDINATE POINTS FOR GEOREFERENCING SHALL BE REQUIRED. THE WATER AND WASTEWATER GPS POINTS SHALL BE TO SURVEY GRADE AND ELECTRIC GPS POINTS SHALL BE MAP GRADE.

REFERENCE NBU'S WATER CONNECTION POLICY FOR ADDITIONAL CAD DELIVERABLE REQUIREMENTS. WATER: VERTICAL BENDS AND EDGE OF STEEL CASING (IF APPLICABLE) PRIOR TO BACKFILL. HORIZONTAL BENDS PRIOR TO BACKFILL TEES PRIOR TO BACKFIL FITTINGS (REDUCERS AND COUPLINGS) PRIOR TO BACKFILL FIRE HYDRANTS (TOP FLANGE) VALVES METER (TOP CENTER OF BOX) BLOW OFF ASSEMBLY CORNER SLAB OF WATER TANK & GATE VALVE ON THE WATER TANK.

<u>WATER</u>

VERTICAL BENDS AND EDGE OF STEEL CASING (IF APPLICABLE) PRIOR TO BACKFILL HORIZONTAL BENDS PRIOR TO BACKFILL

- TEES PRIOR TO BACKFILL
- FITTINGS (REDUCERS AND COUPLINGS) PRIOR TO BACKFILL FIRE HYDRANTS (TOP FLANGE)
- VALVES METER (TOP CENTER OF BOX)
- BLOW OFF ASSEMBLY

CORNER SLAB OF WATER TANK & GATE VALVE ON THE WATER TANK

SEE NBU'S "CAD/GPS DELIVERABLES" ON NBU WEBSITE AT NBUTEXAS.COM FOR COMPLETE DETAILS AND REQUIREMENTS.

NOTES:

- PROJECT IS A TYPE 3 DEVELOPMENT.
- ALL RESPONSIBILITIES FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER OF RECORD. IN ACCEPTING THESE PLANS, THE CITY OF NEW BRAUNFELS MUST RELY UPON THE ADEQUACY OF THE WORK OF THE ENGINEER RECORD.
 IF CONSTRUCTION HAS NOT COMMENCED WITHIN ONE YEAR OF CITY APPROVAL FOR CONSTRUCTION INSPECTION, THAT
- APPROVAL IS NO LONGER VALID. • THIS PROJECT IS WITHIN THE EDWARDS AQUIFER RECHARGE ZONE.
- A PORTION OF THE PROJECT IS LOCATED WITHIN AN SPECIAL FLOOD HAZARD AREA (100 YR. FLOOD), AS DEFINED BY THE
- COMAL COUNTY, TEXAS, FLOOD INSURANCE RATE MAP NO 48091C0435F EFFECTIVE DATE 9/2/2009 AS PREPARED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY.
 GAS UTILITIES ARE NOT INCLUDED IN THE CIVIL CONSTRUCTION PLANS. FINAL GAS UTILITY DESIGN SHALL BE APPROVED BY THE CITY FOR ANY WORK WITHIN PUBLIC RIGHT-OF-WAY.
- FOLLOWING PERMITS ARE REQUIRED PRIOR TO START OF CONSTRUCTION:
 1. CITY OF NEW BRAUNFELS PUBLIC INFRASTRUCTURE PERMIT
 2. NEW BRAUNFELS UTILITY APPROVAL
 3. TXDOT UTILITY PERMIT

LEGAL DESCRIPTION:

BEING 4.158 ACRES OF PROPOSED WATER EASEMENTS LOCATED ON THE 2086 ACRE TRACT DESCRIBED IN VOLUME 167, PAGE 80 IN THE DEED RECORDS OF COMAL COUNTY, TEXAS, THE 57.97 ACRE TRACT DESCRIBED IN DOCUMENT NO. 201706024109 IN THE OFFICIAL PUBLIC RECORDS OF COMAL COUNTY, TEXAS, THE 5.000 ACRE TRACT DESCRIBED IN DOCUMENT NO. 201706024109 IN SAID OFFICIAL PUBLIC RECORDS, THE 129.369 ACRE TRACT DESCRIBED IN DOCUMENT NO. 202006025702 IN SAID OFFICIAL PUBLIC RECORDS, THE 224.440 ACRE TRACT DESCRIBED IN DOCUMENT NO. 202206035304 IN SAID OFFICIAL PUBLIC RECORDS AND LOCATED ON LOT 1, BLOCK 77, VERAMENDI PRECINCT 22A, UNIT 1 RECORDED IN DOCUMENT NO. 202106006261 IN THE MAP AND PLAT RECORDS OF COMAL COUNTY, IN THE J.M. VERAMENDI SURVEY NO. 2, ABSTRACT 3, COMAL COUNTY, TEXAS.

: HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL, AERIAL IMAGERY PROVIDED BY GOOGLE® UNLESS OTHERWISE NOTED. Imagery © 2015.CAPCOG.Digital Globe.Texas Orthoimagery Program, USDA Farm Service Agence

ate: Jun 22, 2023, 8:07am User ID: cdilly

VERAMENDIOFFSITE WATER MAIN COMAL COUNTY, TEXAS COMAL COUNTY, TEXAS DIVIDUATION OFFSITE WATER MAIN DIVIDUATION OFFSITE WATER MAIN COMAL COUNTY, TEXAS DIVIDUATION OFFSITE WATER MAIN DIVIDUATION OFFSITE <td colsp



LOCATION MAP

PREPARED FOR: NEW BRAUNFELS UTILITIES

JUNE 2023



SAN ANTONIO I AUSTIN I HOUSTON I FORT WORTH I DALLAS2000 NW LOOP 410 I SAN ANTONIO, TX 78213 I 210.375.9000TBPE FIRM REGISTRATION #470 I TBPLS FIRM REGISTRATION #10028800

Sheet Title	Sheet Number
COVER SHEET	0.00
GENERAL NOTES 1	1.00
GENERAL NOTES 2	1.01
GENERAL NOTES 3	1.02
OVERALL SHEET	2.00
WATER MAIN PLAN AND PROFILE	3.00
WATER MAIN PLAN AND PROFILE	3.01
WATER MAIN PLAN AND PROFILE	3.02
WATER MAIN PLAN AND PROFILE	3.03
WATER MAIN PLAN AND PROFILE	3.04
WATER MAIN PLAN AND PROFILE	3.05
WATER MAIN PLAN AND PROFILE	3.06
WATER MAIN PLAN AND PROFILE	3.07
WATER MAIN PLAN AND PROFILE	3.08
DETAIL SHEET 1	4.00
DETAIL SHEET 2	4.01
SWPPP PLAN	5.00
SWPPP PLAN	5.01
SWPPP PLAN	5.02
SWPPP PLAN	5.03
SWPPP PLAN	5.04
SWPPP DETAIL	5.05



<u>UTI</u>	LITY COMPANY NOTIFICATION: CONTRACTOR SHALL NOTIFY THE FOLLOWIN PRIOR TO EXCAVATION:	NG UTILITY COMPANIES 48	3 HOURS	<u>GEN</u> G28	ERAL NOTES CON'T: PRIOR TO CONSTRUCTION CONTRACTOR SHALL PROVIDE TO NI PROJECT SCHEDULE FOR APPROVAL. THE CONTRACTOR SHAL
	NEW BRAUNFELS UTILITIES (Sewer, Water, Electric) TIMEWARNER CABLE	(830)629-8400 (210)385-1459			WITHOUT NBU'S APPROVAL. THE PHASING PLAN AND PROJECT SUBSIDIARY TO MOBILIZAITON.
	AT&T CENTERPOINT GAS TEXAS ONE CALL	(210)283–1626 (830)643–6434 (800)545–6005		G29	AS DIRECTED AND APPROVED BY THE ENGINEER OF RECORD, PLACE SHALL BE CUT, PLUGGED AND FILLED WITH A PUMPAE AND IS SUBSIDIARY TO THE ABANDONMENT.
<u>GE</u>	NERAL NOTES:	S AND CONSTRUCTION PE	ROCEDURES WITHIN THE SCOPE OF THI	G30	A COPY OF THE CONTRACT DOCUMENTS, PLANS, AND SPECIF CONTRACTOR ON-SITE AT ALL TIMES.
G2	CONTRACT SHALL BE APPROVED BY NEW BRAUNFELS UTILITIES WATER SYSTEMS CON ALL MATERIALS AND CONSTRUCTION PROCE	BRAUNFELS UTILITIES AND NECTION & CONSTRUCT EDURES WITHIN THE SCOF	COMPLY WITH THE CURRENT NEW ION POLICY. PE OF THIS CONTRACT SHALL CONFORM	G31 1 TO	IN PREPARING THE PLANS AND SPECIFICATIONS, URBAN CIVIL EXISTING UNDERGROUND UTILITIES. IT IS NOT GUARANTEED T PLANS. ALL EXISTING UTILITIES SHALL BE FIELD VERIFIED AN CONSTRUCTION.
07	THE LATEST TEXAS DEPARTMENT OF TRANS HIGHWAYS, STREETS AND BRIDGES EXCEPT	SPORTATION STANDARD SF AS MODIFIED AND SHOW	PECIFICATIONS FOR CONSTRUCTION OF IN IN THE TECHNICAL SPECIFICATIONS.	G32	THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES AND START OF CONSTRUCTION.
G3	CONTRACTOR AGREES TO ASSUME SOLE A CONSTRUCTION OF THE PROJECT, INCLUDII SHALL APPLY CONTINUOUSLY AND NOT BE DEFEND, INDEMNIFY AND HOLD THE OWNEL DIRECTORS, OR CONSULTANTS HARMLESS THE PERFORMANCE OF THE WORK ON THI NEGLIGENCE OF THE OWNER OR ENGINEER	ND COMPLETE RESPONSIB NG SAFETY OF ALL PERSO LIMITED TO NORMAL WO RS AND THE ENGINEER A FROM ANY AND ALL LIABI IS PROJECT, EXCEPTING F R, ENGINEER'S DIRECTORS	ILITY FOR JOB SITE CONDITIONS DURIN ONS AND PROPERTY. THIS REQUIREMEN RKING HOURS. THE CONTRACTOR SHA ND HIS EMPLOYEES, PARTNERS OFFICE LITY, REAL OR ALLEGED, IN CONNECTIO TROM LIABILITY ARISING FROM SOLE , OFFICERS, EMPLOYEES, OR CONSULT/	IG THE IT G33 LL RS, DN WITH ANTS.	THE CONTRACTOR SHALL, BY UNCOVERING UTILITIES, VERIFY T UTILITIES AT LOCATED AND SHOWN CROSSINGS AND TIE-IN PA CONSTRUCTION. CONFLICTS WITH THE PROPOSED WORK SHA ENGINEER OF RECORD AND NBU'S PROJECT INSPECTOR IMME RESULTING IN ANY CHANGES OR ADDITIONAL COSTS, SHALL B
G4	CONTRACTOR AND / OR CONTRACTOR'S IN IMPLEMENT A TRENCH SAFETY PROGRAM IN AND ACTIVITIES OF INDIVIDUALS WORKING	IDEPENDENTLY-RETAINED N ACCORDANCE WITH OSH IN AND AROUND TRENCH	EMPLOYEE OR SAFETY CONSULTANT SH IA STANDARDS GOVERNING THE PRESEN EXCAVATION.	G34 IALL ICE	THE CONTRACTOR SHALL PROVIDE ACCESS TO ALL DRIVES DU NOTIFY AND COORDINATE WITH ADJACENT PROPERTY OWNERS CONFLICTS. NIGHT WORK MAY BE REQUIRED TO MAINTAIN ACC NIGHT WORK WILL BE AT THE CONTRACTOR'S SOLE EXPENSE.
G5	CONTRACTOR SHALL BE RESPONSIBLE FOR DONE TO EXISTING FENCES, DRIVEWAYS, S ADJUSTED ON PLANS). COST OF RESTORA	R RESTORING TO ITS ORIG FIGNS, IRRIGATION SYSTEM TIONS, IF ANY, SHALL BE	INAL OR BETTER CONDITION, ANY DAMA S, LANDSCAPE, AND EXISTING UTILITIES THE CONTRACTOR'S ENTIRE EXPENSE.	AGES G35 (NOT	PRIOR TO ORDERING MATERIALS TO BE USED IN CONSTRUCTION THE ENGINEER WITH FOUR (4) COPIES OF THE SOURCE, TYPE SPECIFICATION DATA AND/OR SHOP DRAWINGS, AS APPLICAE OF THE FOLLOWING ITEMS AND ALL MATERIAL ITEMS REFERRE
G6	CONTRACTOR SHALL PROCURE ALL PERMIT NOTICES NECESSARY AND INCIDENTAL TO	'S AND LICENSES, PAY AL THE DUE AND LAWFUL PR	L CHARGES, FEES, AND TAXES AND GIROSECUTION OF THE WORK.	VE ALL	 ITEM 247, FLEXIBLE BASE ITEM 276, CEMENT TREATMENT (PLANT MIXED)
G7	CONTRACTOR IS RESPONSIBLE FOR REMOV CONTRACTOR SHALL NOT PERMANENTLY PL FIRST OBTAINING AN APPROVED FLOODPLAI	AL OF ALL WASTE MATERI ACE ANY WASTE MATERIA IN DEVELOPMENT PERMIT.	IALS UPON PROJECT COMPLETION. TH LS IN THE 100-YEAR FLOODPLAIN WITH	E HOUT	 TIEM 401, FLOWABLE BACKFILL ITEM 420, CONCRETE (BOTH CONCRETE AND REINFOR ITEM 432, RIPRAP (BOTH CONCRETE AND REINFORC WATER MAINS, SERVICES, AND ALL WATER APPURT
G8	THE CONTRACTOR SHALL NOT PLACE ANY WITHOUT AN APPROVED WATER POLLUTION	MATERIALS ON THE RECH ABATEMENT PLAN FROM	IARGE ZONE OF THE EDWARDS AQUIFEF THE TCEQ, 30 TAC 213.5(b).	R G36	WHERE A CONFLICT BETWEEN THE PLANS, SPECIFICATIONS, S RESTRICTIVE REQUIREMENTS AS INTERPRETED BY THE ENGINE
G9	BARRICADES AND WARNING SIGNS SHALL ODEVICES" AND SHALL BE LOCATED TO PROCONSTRUCTION PERSONNEL AND EQUIPMENT CONSTRUCTION. THE CONTRACTOR IS RES	CONFORM TO THE "TEXAS DVIDE MAXIMUM PROTECTION NT WHILE PROVIDING CON SPONSIBLE FOR MAINTAINI	MANUAL ON UNIFORM TRAFFIC CONTRO ON TO THE PUBLIC AS WELL AS TINUOUS TRAFFIC FLOW AT ALL TIMES NG ALL DEVICES DURING CONSTRUCTION	DL DURING G37 N.	SATISFACTION OF AND APPROVAL BY NBU. ALL TRENCHES MUST BE BACK FILLED OR PLATTED AT THE I NON-SEPARATE PAY ITEM SUBSIDIARY TO ALL OTHER PAY I
G10	CONTRACTOR IS REQUIRED TO VERIFY PRO BE UNDERSTOOD TO SIGNIFY BOTH HORIZO	DJECT ELEVATIONS. THE T	TERM "MATCH EXISTING" OR "TIE IN" S NMENT.	HALL G38	THE CONTRACTOR SHALL VERIFY THE LOCATION AND SIZE OF RELOCATED LINES WHERE SHOWN AND NOTE TO ENGINEER IF
G11	THE LOCATION OF UTILITIES, EITHER UNDER VERIFIED BY THE CONTRACTOR BEFORE BE	RGROUND OR OVERHEAD, EGINNING CONSTRUCTION	SHOWN ARE APPROXIMATE AND SHALL OPERATIONS.	BE G39	BEFORE CONNECTION OF A NEW WATER MAIN TO NBU'S SYST TEST JUMPER TO EXISTING AND NEW LINE TO FLUSH, FILL, A TEST JUMPER AND CONNECT NEW PIPE TO EXISTING OR COM
G12	OSHA REGULATIONS PROHIBIT OPERATIONS ENERGIZED LINE OPERATING UP TO 50KV. ELECTRICAL LINES OPERATING ABOVE 50KV ENERGIZED ELECTRICAL LINE, THE CONTRAC MAKE WHATEVER ADJUSTMENTS NECESSARY	THAT WILL BRING PERSO SEE OSHA REGULATIONS WHERE WORKMEN AND CTOR SHALL NOTIFY THE TO ENSURE THE SAFETY	NS OR EQUIPMENT WITHIN 10 FEET OF FOR MINIMUM CLEARANCES FOR ENER OR EQUIPMENT HAVE TO WORK CLOSE ELECTRICAL POWER COMPANY INVOLVED OF THOSE WORKMEN.	FAN G40 GIZED G40 TO AN D AND	THE CONTRACTOR, AS A NON-SEPARATE PAY ITEM (UNLESS SHALL COORDINATE WITH NBU AND SHALL PROVIDE LINE STO TO COMPLETE THE PROPOSED TIE INS AND TO MINIMIZE SER' TEMPORARY CONNECTIONS, UNLESS OTHERWISE SHOWN ARE I WATER MAIN.
G13	IT SHALL BE THE CONTRACTOR'S RESPONS CONSTRUCTION. UTILITY COMPANIES ARE	SIBILITY TO LOCATE UTILIT ALSO PREVIOUSLY MENTIO	Y SERVICE LINES AS REQUIRED FOR INED IN "UTILITY COMPANY NOTIFICATION	N". G41	ALL REQUIRED TRENCH PROTECTION FOR ALL SAN. SWR., WA ABANDON IN PLACE, CUTS AND PLUGS ARE A NON-SEPARA
G14	DUE TO FEDERAL REGULATIONS TITLE 49, AT ALL TIMES. THE CONTRACTOR MUST P PROJECT AREA.	PART 192[8], GAS COMP PROTECT AND WORK AROU	ANIES MUST MAINTAIN ACCESS TO GAS IND ANY GAS VALVES THAT ARE IN THE	VALVES G42	WATER, SEWER AND GAS SERVICE LOCATIONS SHOWN ARE AP EXISTING WATER SERVICES, SEWER SERVICES AND GAS SERVICES
G15	MATERIALS LARGER THAN 4 INCHES IN SIZ INCORPORATED INTO THE CONSTRUCTION S PROPER MANNER ACCEPTABLE TO THE EN	ZE WITHIN THE CONSTRUC SHALL BE REMOVED FROM IGINEER AT THE EXPENSE	TION LIMITS AND NOT SPECIFICLY THE RIGHT OF WAY AND DISPOSED C OF THE CONTRACTOR.	FIN A	LINE INSTALL. CONTRACTOR TO REPLACE, REPAIR, OR WORK A SPECIFICALLY SHOWN ADJUSTED BY PLANS. THIS WORK IS A THE VARIOUS BID ITEMS. UNLESS OTHERWISE NOTED, ALL LIN
G16	THE CONTRACTOR SHALL MAINTAIN THE RI APPEARANCE AS SHOWN IN THE PLANS O	IGHT OF WAY, EASEMENTS R AS APPROVED BY THE	S, AND SITE ACCESS IN A SATISFACTO ENGINEER.	RY G43	CONTRACTOR SHALL COORDINATE WITH NBU TO SUPPORT UT PERFORM WORK. THIS IS A NON-SEPARATE PAY ITEM AND S
G17	ALL PROJECT CLEARING OPERATIONS WILL PREVENTION PLAN.	BE COORDINATED WITH T	THE PROJECT'S STORMWATER POLLUTIO	N G44	ALL REQUIRED TRENCH PROTECTION FOR ALL INDIVIDUAL WAT REMOVAL, OR RELOCATION IS A NON-SEPARATE PAY ITEM AN SERVICE INSTALLATION.
G18	THE CONTRACTOR IS FULLY RESPONSIBLE FURNISHING ALL TRAFFIC CONTROL DEVICE CONSTRUCTION METHODS SHALL BE CONDU SO AS TO PERMIT THE CONTINUOUS MOVE MINIMAL DELAYS TO THE TRAFFIC TRAVELI THE CONTRACTOR SHALL OPEN ALL LANES CLOSING THE ROAD FULLY FOR ANY PERIO APPROVAL A MINIMUM OF 3 DAYS IN ADV BRAUNFELS. THE CLOSURE IS AT THE DISO GUARANTEED. THE CONTRACTOR SHALL CL RESULTING FROM CONTRACT OPERATIONS	FOR THE TRAFFIC CONTR S, MESSAGE BOARDS, PIL UCTED TO PROVIDE THE L MENT OF TRAFFIC IN AT NG IN THE OPPOSITE DIR S OF TRAFFIC IN BOTH DI OD OF TIME, THE CONTRA ANCE OF THE PROPOSED CRETION AND CONVENIENC LAN UP AND REMOVE FR AT THE END OF EACH WO	OL AND WILL BE RESPONSIBLE FOR LOT CARS, AND FLAGGERS. THE LEAST POSSIBLE INTERFERENCE TO TRA- LEAST ONE DIRECTION AT ALL TIMES ECTION. AT THE END OF EACH WORK RECTIONS. IF THE CONTRACTOR DESIRI CTOR SHALL FIRST OBTAIN WRITTEN CLOSURE FROM NBU AND THE CITY OF CE OF THE APPROVING ENTITIES AND I ROM THE WORK AREA ANY LOOSE MAT ORK DAY.	AFFIC WITH <u>N</u> DAY ES 1. DF NEW S NOT ERIAL 2.	BUGENERAL NOTES: ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE BY NEW BRAUNFELS UTILITIES AND COMPLY WITH THE CURREN CONNECTION/CONSTRUCTION POLICY". CONTRACTOR SHALL NOT PROCEED WITH ANY PIPE INSTALLAT PLANS FROM THE CONSULTANT OR ENGINEER AND NOTIFY NB
G19	ALL PVC WATER MAINS SHALL BE AWWA (250.	C900 PC 235 DR18. ALL	. DI WATER MAINS SHALL BE AWWA C1	51 PC	CONTRACTOR, WHICH HAS NOT RECEIVED A NOTICE TO PROCE SYSTEMS ENGINEERING WILL BE SUBJECT TO REMOVAL AND RI
G20	ALL FIRE LINE SERVICES AND FIRE HYDRA SEAL COATED AS REQUIRED BY AWWA C10 PIPE JOINTS FROM MAIN TO HYDRANT OR RESTRAINTS.	NT LEADS SHALL BE AWV 04. ALL FIRE LINE SERVI EXISTING TIE IN SHALL B	VA C151 PC 350 CEMENT-MORTAR LIN CES AND FIRE HYDRANT LEADS FITTIN BE RESTRAINED WITH MECHANICAL JOIN	ED AND GS AND 3. T	THE DEVELOPER DEDICATES THE WATER / WASTEWATER MAINS ACCEPTANCE BY THE NEW BRAUNFELS UTILITIES WATER SYSTE WASTEWATER MAINS WHICH ARE LOCATED WITHIN PLATTED UT
G21	ALL DUCTILE IRON FITTINGS, PIPE AND REMATERIAL.	STRAINTS SHALL BE WRA	PPED WITH A MINIMUM 8-MILL POLYET	HYLENE 4.	DEVELOPMENTS. (AS APPLICABLE). CONTRACTOR AGREES TO ASSUME SOLE AND COMPLETE RESP
G22	ALL FITTINGS COMMON TO WATER MAIN, FI FITTINGS SHALL BE CEMENT MORTAR LINED POLYETHYLENE MATERIAL.	IRE LINE, AND LEADS SHA D AND SEAL COATED AND	ALL MEET AWWA STANDARDS C110 OR D WRAPPED WITH A MINIMUM 8-MIL	C153.	CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL I SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMA DEFEND, INDEMNIFY AND HOLD THE OWNERS AND THE ENGINE DIRECTORS, OR CONSULTANTS HARMLESS FROM ANT AND ALL WITH THE PERFORMANCE OF THE WORK ON THIS PROJECT, EX
G23	ALL WATER AND SEWER UTILITIES ARE TO CONNECTION AND CONSTRUCTION POLICY I	BE CONSTRUCTED IN AC	CORDANCE WITH NBU'S WATER SYSTEM	S 5.	NEGLIGENCE OF THE OWNER OR ENGINEER, ENGINEER'S DIRECT CONTRACTOR TO CONTACT THE ENGINEER-OF-RECORD (EOR)
G24	THE CONTRACTOR SHALL MAINTAIN SERVIC DURING CONSTRUCTION.	CE TO EXISTING WASTEWA	TER AND WATER SYSTEMS AT ALL TIM	ES 6.	CHANGES TO THE APPROVED CONSTRUCTION PLANS WILL REQ CONTRACTOR AND / OR CONTRACTOR'S INDEPENDENTLY RETA
G25	ALL VERTICAL BENDS AND FITTINGS REQUI SEPARATE PAY ITEM AND ARE SUBSIDIARY	RED FOR WATER MAIN. FI Y TO THE VARIOUS BID IT	IRE SERVICE, LEADS AND TIE INS ARE EMS.	A NON	IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRE
G26	ALL RESTRAINTS AT FITTINGS VALVES, BEN PAY ITEM AND ARE SUBSIDIARY TO THE V	NDS, ALONG ALL PIPES A /ARIOUS BID ITEMS.	ND THROUGH CASINGS ARE A NON-SE	PARATE 7.	CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ITS DONE TO EXISTING FENCES, CURBS, STREETS, DRIVEWAYS, LAN UTILITIES (NOT ADJUSTED ON PLANS). COST OF RESTORATION: EXPENSE
G27	CONTRACTOR SHALL PROVIDE AND MAINTA SUBSIDIARY TO PREPARING RIGHT OF WAY	AIN SWPPP, NOI, NOT. TH	HIS IS A NON-SEPARATE PAY ITEM IS		EAPENSE.

DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL. AERIAL IMAGERY PROVIDED BY GOOGLE® UNLESS OTHERWISE NOTED. Imagery @ 2016,CAPCOG,Digital Globe,Texas

RAL NOTES CON'T:

RIOR TO CONSTRUCTION CONTRACTOR SHALL PROVIDE TO NBU A PROJECT PHASING PLAN AND PROPOSED PROJECT SCHEDULE FOR APPROVAL. THE CONTRACTOR SHALL NOT WORK CONTRARY TO THE PHASING PLAN WITHOUT NBU'S APPROVAL. THE PHASING PLAN AND PROJECT SCHEDULE IS A NON-SEPARATE PAY ITEM AND IS SUBSIDIARY TO MOBILIZAITON.

AS DIRECTED AND APPROVED BY THE ENGINEER OF RECORD, ALL PIPES OR CASINGS TO BE ABANDONED IN PLACE SHALL BE CUT, PLUGGED AND FILLED WITH A PUMPABLE GROUT. THIS IS A NON-SEPARATE PAY ITEM AND IS SUBSIDIARY TO THE ABANDONMENT.

COPY OF THE CONTRACT DOCUMENTS, PLANS, AND SPECIFICATIONS SHALL BE MAINTAINED BY THE CONTRACTOR ON-SITE AT ALL TIMES.

IN PREPARING THE PLANS AND SPECIFICATIONS, URBAN CIVIL HAS ENDEAVORED TO INDICATE THE LOCATION OF EXISTING UNDERGROUND UTILITIES. IT IS NOT GUARANTEED THAT ALL UTILITIES HAVE BEEN SHOWN ON THE PLANS. ALL EXISTING UTILITIES SHALL BE FIELD VERIFIED AND PROTECTED PRIOR TO THE START OF CONSTRUCTION.

HE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES AND VERIFY LOCATION OF ALL UTILITIES PRIOR TO START OF CONSTRUCTION.

THE CONTRACTOR SHALL, BY UNCOVERING UTILITIES, VERIFY THE LOCATION AND ELEVATION OF ALL EXISTING ITILITIES AT LOCATED AND SHOWN CROSSINGS AND TIE-IN POINTS WITH THE PROPOSED UTILITIES PRIOR TO CONSTRUCTION. CONFLICTS WITH THE PROPOSED WORK SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER OF RECORD AND NBU'S PROJECT INSPECTOR IMMEDIATELY. FAILURE BY THE CONTRACTOR TO DO SO, RESULTING IN ANY CHANGES OR ADDITIONAL COSTS. SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY. THE CONTRACTOR SHALL PROVIDE ACCESS TO ALL DRIVES DURING CONSTRUCTION AND SHALL NOTIFY AND COORDINATE WITH ADJACENT PROPERTY OWNERS WHERE PRACTICAL TO MINIMIZE CONFLICTS. NIGHT WORK MAY BE REQUIRED TO MAINTAIN ACCESS TO DRIVES. ALL REQUIRED

PRIOR TO ORDERING MATERIALS TO BE USED IN CONSTRUCTION, CONTRACTOR SHALL PROVIDE THE ENGINEER WITH FOUR (4) COPIES OF THE SOURCE, TYPE, GRADATION, MATERIAL SPECIFICATION DATA AND/OR SHOP DRAWINGS, AS APPLICABLE, TO SATISFY THE REQUIREMENTS OF THE FOLLOWING ITEMS AND ALL MATERIAL ITEMS REFERRED TO IN THESE LISTED ITEMS:

- ITEM 247, FLEXIBLE BASE
- ITEM 276, CEMENT TREATMENT (PLANT MIXED) ITEM 401, FLOWABLE BACKFILL
- ITEM 420, CONCRETE (BOTH CONCRETE AND REINFORCING STEEL)
- ITEM 432, RIPRAP (BOTH CONCRETE AND REINFORCING STEEL) WATER MAINS, SERVICES, AND ALL WATER APPURTENANCES
- SEWER MAINS, SERVICES, AND ALL SEWER APPURTENANCES

WHERE A CONFLICT BETWEEN THE PLANS, SPECIFICATIONS, STANDARDS AND POLICY EXIST THE MOST RESTRICTIVE REQUIREMENTS AS INTERPRETED BY THE ENGINEER OF RECORD WILL GOVERN TO THE SATISFACTION OF AND APPROVAL BY NBU.

ALL TRENCHES MUST BE BACK FILLED OR PLATTED AT THE END OF EACH WORK DAY. THIS IS A NON-SEPARATE PAY ITEM SUBSIDIARY TO ALL OTHER PAY ITEMS.

THE CONTRACTOR SHALL VERIFY THE LOCATION AND SIZE OF ALL WATER AND SEWER SERVICES ALONG RELOCATED LINES WHERE SHOWN AND NOTE TO ENGINEER IF ADDITIONAL SERVICES ARE FOUND.

BEFORE CONNECTION OF A NEW WATER MAIN TO NBU'S SYSTEM OR BEFORE COMPLETING A TIE IN, CONNECT TEST JUMPER TO EXISTING AND NEW LINE TO FLUSH, FILL, AND TEST. WHEN AUTHORIZED BY NBU REMOVE TEST JUMPER AND CONNECT NEW PIPE TO EXISTING OR COMPLETE TIE IN.

THE CONTRACTOR, AS A NON-SEPARATE PAY ITEM (UNLESS SHOWN AND LOCATED ON PLAN SHEET), SHALL COORDINATE WITH NBU AND SHALL PROVIDE LINE STOPPERS WHERE REQUIRED BY THE CONTRACTOR TO COMPLETE THE PROPOSED TIE INS AND TO MINIMIZE SERVICE OUTAGE. LINE STOPPERS. COUPLINGS. AND TEMPORARY CONNECTIONS, UNLESS OTHERWISE SHOWN ARE NON-SEPARATE PAY ITEMS AND SUBSIDIARY TO NATER MAIN.

ALL REQUIRED TRENCH PROTECTION FOR ALL SAN. SWR., WATER MAIN, CASINGS AND CASING REMOVAL ABANDON IN PLACE, CUTS AND PLUGS ARE A NON-SEPARATE PAY ITEM AND ARE SUBSIDIARY TO THE VARIOUS BID ITEMS.

WATER, SEWER AND GAS SERVICE LOCATIONS SHOWN ARE APPROXIMATE. CONTRACTOR TO LOCATE ALL EXISTING WATER SERVICES, SEWER SERVICES AND GAS SERVICES IN CONFLICT WITH WATER LINE AND SEWER LINE INSTALL. CONTRACTOR TO REPLACE, REPAIR, OR WORK AROUND ALL EXISTING SERVICES NOT SPECIFICALLY SHOWN ADJUSTED BY PLANS. THIS WORK IS A NON-SEPARATE PAY ITEM AND SUBSIDIARY TO THE VARIOUS BID ITEMS. UNLESS OTHERWISE NOTED, ALL LINES SHALL BE ASSUMED TO BE SERVICE LINES.

CONTRACTOR SHALL COORDINATE WITH NBU TO SUPPORT UTILITY POLES AND GUY WIRES AS REQUIRED TO PERFORM WORK. THIS IS A NON-SEPARATE PAY ITEM AND SUBSIDIARY TO THE VARIOUS BID ITEMS.

ALL REQUIRED TRENCH PROTECTION FOR ALL INDIVIDUAL WATER AND SEWER SERVICES INSTALLATION, REMOVAL, OR RELOCATION IS A NON-SEPARATE PAY ITEM AND IS SUBSIDIARY TO THE WATER AND SEWER SERVICE INSTALLATION.

J GENERAL NOTES:

ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THE PROJECT SHALL BE APPROVED BY NEW BRAUNFELS UTILITIES AND COMPLY WITH THE CURRENT "NEW BRAUNFELS UTILITIES WATER SYSTEMS. CONNECTION/CONSTRUCTION POLICY"

CONTRACTOR SHALL NOT PROCEED WITH ANY PIPE INSTALLATION WORK UNTIL THEY OBTAIN A COPY OF THE PLANS FROM THE CONSULTANT OR ENGINEER AND NOTIFY NBU WATER SYSTEMS ENGINEERING AT830-608-8971 WITH AT LEAST TWO (2) WORKING DAYS (48 HOURS) NOTICE. WORK COMPLETED BY THE CONTRACTOR, WHICH HAS NOT RECEIVED A NOTICE TO PROCEED FROM NEW BRAUNFELS UTILITIES WATER YSTEMS ENGINEERING WILL BE SUBJECT TO REMOVAL AND REPLACEMENT BY AND AT THE EXPENSE OF THE CONTRACTOR.

THE DEVELOPER DEDICATES THE WATER / WASTEWATER MAINS UPON COMPLETION BY THE CONTRACTOR AND ACCEPTANCE BY THE NEW BRAUNFELS UTILITIES WATER SYSTEM. NBU WILL OWN AND MAINTAIN SAID WATER /WASTEWATER MAINS WHICH ARE LOCATED WITHIN PLATTED UTILITY EASEMENTS OR PUBLIC ROW OF PROPOSED DEVELOPMENTS. (AS APPLICABLE).

CONTRACTOR AGREES TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNERS AND THE ENGINEER AND HIS EMPLOYEES, PARTNERS OFFICERS, DIRECTORS, OR CONSULTANTS HARMLESS FROM ANT AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF THE WORK ON THIS PROJECT, EXCEPTING FROM LIABILITY ARISING FROM SOLE NEGLIGENCE OF THE OWNER OR ENGINEER, ENGINEER'S DIRECTORS, OFFICERS, EMPLOYEES, OR CONSULTANTS.

CONTRACTOR TO CONTACT THE ENGINEER-OF-RECORD (EOR) FOR ANY FIELD CHANGES. ANY REVISIONS OR CHANGES TO THE APPROVED CONSTRUCTION PLANS WILL REQUIRE ADDITIONAL APPROVAL BY NBU IN WRITING.

CONTRACTOR AND / OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL MPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ITS ORIGINAL OR BETTER CONDITION. ANY DAMAGES DONE TO EXISTING FENCES, CURBS, STREETS, DRIVEWAYS, LANDSCAPING AND STRUCTURES, AND EXISTING JTILITIES (NOT ADJUSTED ON PLANS). COST OF RESTORATIONS, IF ANY, SHALL BE THE CONTRACTOR'S ENTIRE

- CAUTION.
- THE WORK.
- PERMIT.
- 30 TAC 213.5(b).

- CONSTRUCTION OPERATIONS.
- WATER/WASTEWATER LOCATION.

- LISTED ITEMS:
- POLICY MANUAL.

- - NBU)
 - (12") LOOSE.

 - PLANS.

PROPOSED CONSTRUCTION SEQUENCE:

- 2. INSTALL TREE PRESERVATION MEASURES.
- 3. CONSTRUCT WATER SYSTEM.
- 4. ESTABLISH SITE STABILIZATION.

8. THE CONTRACTOR SHALL AVOID CUTTING ROOTS LARGER THAN ONE INCH IN DIAMETER WHEN EXCAVATING NEAR EXISTING TREES. EXCAVATION IN VICINITY OF TREES SHALL PROCEED WITH

9. CONTRACTOR SHALL PROCURE ALL PERMITS AND LICENSES, PAY ALL CHARGES, FEES AND TAXES AND GIVE ALL NOTICES NECESSARY AND INCIDENTAL TO THE DUE AND LAWFUL PROSECUTION OF

10. NO EXTRA PAYMENT SHALL BE ALLOWED FOR WORK CALLED FOR ON THE PLANS BUT NOT INCLUDED ON THE BID SCHEDULE. THIS INCIDENTAL WORK WILL BE REQUIRED AND SHALL BE INCLUDED UNDER THE PAY ITEM TO WHICH IT RELATES.

11. CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL WASTE MATERIALS UPON PROJECT COMPLETION. THE CONTRACTOR SHALL NOT PERMANENTLY PLACE ANY WASTE MATERIALS IN THE 100-YEAR FLOOD PLAIN WITHOUT FIRST OBTAINING AN APPROVED FLOOD PLAIN DEVELOPMENT

12. THE CONTRACTOR SHALL NOT PLACE ANY MATERIALS ON THE RECHARGE ZONE OF THE EDWARDS AQUIFER WITHOUT AN APPROVED WATER POLLUTION ABATEMENT PLAN FROM THE TCEQ

13. BARRICADES AND WARNING SIGNS SHALL CONFORM TO THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AND SHALL BE LOCATED TO PROVIDE MAXIMUM PROTECTION TO THE PUBLIC AS WELL AS CONSTRUCTION PERSONNEL AND EQUIPMENT WHILE PROVIDING CONTINUOUS TRAFFIC FLOW AT ALL TIMES DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL DEVICES DURING CONSTRUCTION.

14. CONTRACTOR IS REQUIRED TO VERIFY PROJECT ELEVATIONS. THE TERM "MATCH EXISTING" SHALL BE UNDERSTOOD TO SIGNIFY BOTH HORIZONTAL AND VERTICAL ALIGNMENT.

15. THE LOCATION OF UTILITIES, EITHER UNDERGROUND OR OVERHEAD, SHOWN WITHIN THE RIGHT OF WAY ARE APPROXIMATE AND SHALL BE VERIFIED BY THE CONTRACTOR BEFORE BEGINNING

16. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE UTILITY SERVICE LINES AS REQUIRED FOR CONSTRUCTION. CONTRACTORS SHALL CALL THE ONE CALL SYSTEM FOR

17. DUE TO FEDERAL REGULATIONS TITLE 49, PART 192 (8), GAS COMPANIES MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR MUST PROTECT AND WORK AROUND ANY GAS VALVES THAT ARE IN THE PROJECT AREA.

18. THE CONTRACTOR IS FULLY RESPONSIBLE FOR THE TRAFFIC CONTROL AND WILL BE RESPONSIBLE FOR FURNISHING ALL TRAFFIC CONTROL DEVICES, AND FLAGGERS. THE CONSTRUCTION METHODS SHALL BE CONDUCTED TO PROVIDE THE LEAST POSSIBLE INTERFERENCE TO TRAFFIC SO AS TO PERMIT THE CONTINUOUS MOVEMENT OF THE TRAFFIC IN ONE DIRECTION AT ALL TIMES. THE CONTRACTOR SHALL CLEAN UP AND REMOVE FROM THE WORK AREA ANY LOOSE MATERIAL RESULTING FROM CONTRACT OPERATIONS AT THE END OF EACH WORKDAY.

19. PRIOR TO ORDERING MATERIALS TO BE USED IN CONSTRUCTION, CONTRACTOR SHALL PROVIDE THE ENGINEER WITH FOUR (4) COPIES OF THE SOURCE, TYPE, GRADATION, MATERIAL SPECIFICATION DATA AND / OR SHOP DRAWINGS, AS APPLICABLE, TO SATISFY THE REQUIREMENTS OF THE FOLLOWING ITEMS AND ALL MATERIAL ITEMS REFERRED TO IN THESE

A. WATER MAINS AND SERVICES B. WASTEWATER MAINS AND SERVICES

21. THRUST BLOCKS WILL NOT BE ALLOWED ON THE SYSTEM WITHOUT SPECIAL APPROVAL. JOINTS WILL BE RESTRAINED WITH RESTRAINING SYSTEMS APPROVED BY NBU AND RESTRAINT LENGTH SHALL BE SUBMITTED TO NBU AT THE TIME OF PLAN SUBMITTAL.

22. WATER JETTING THE BACKFILL WITHIN A STREET WILL NOT BE PERMITTED. WASTEWATER TRENCHES SUBJECT TO TRAFFIC SHALL CONFORM TO NBU CONNECTION AND CONSTRUCTION

23. WHERE THE MINIMUM 9 FOOT SEPARATION DISTANCE BETWEEN WASTEWATER LINES AND WATER LINES / MAINS CANNOT BE MAINTAINED, THE INSTALLATION OF WASTEWATER LINES SHALL BE IN STRICT ACCORDANCE WITH 30 TAC 217.

24. CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLIES WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

25. UTILITY TRENCH COMPACTION WITH STREET R.O.W.

A. ALL UTILITY TRENCH COMPACTION TEST WITHIN THE STREET PAVEMENT SECTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR'S GEO-TECHNICAL ENGINEER .(APPROVED BY

B. FILL MATERIAL SHALL BE PLACED IN UNIFORM LAYERS NOT TO EXCEED TWELVE INCHES

C. EACH LAYER OF MATERIAL SHALL BE COMPACTED AS SPECIFIED AND TESTED FOR DENSITY AND MOISTURE IN ACCORDANCE WITH TEXT METHODS TEX-113-E, TEX-114-E, TEX-115-E.

D. THE NUMBER AND LOCATION OF REQUIRED TESTS SHALL BE DETERMINED BY THE GEO-TECHNICAL ENGINEER AND APPROVED BY THE NBU INSPECTOR.

E. UPON COMPLETION OF TESTING THE GEO-TECHNICAL ENGINEER SHALL PROVIDE THE ENGINEER OF RECORD WITH ALL TESTING DOCUMENTATION AND A CERTIFICATION STATING THAT THE PLACEMENT OF FILL MATERIAL HAS BEEN COMPLETED IN ACCORDANCE WITH THE

1. INSTALL TEMPORARY STORMWATER EROSION CONTROL MEASURES IN AFFECTED CONSTRUCTION AREAS AND STABILIZED CONSTRUCTION ENTRANCES/EXITS.

5. REMOVE ALL TEMPORARY STORMWATER EROSION CONTROL MEASURES.

NOTE: SOME ITEMS ABOVE MAY OCCUR SIMULTANEOUSLY OR MAY OCCUR OUT OF SEQUENCE INDICATED. ALL SEQUENCES SUBJECT TO CHANGE.

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CITY OF NEW BRAUNFELS GENERAL CONSTRUCTION **CONSTRUCTION PLAN NOTES**

Revised 01/2019

These notes must appear on the cover and/or "notes" sheet of all subdivision construction plans and on commercial plans where applicable:

If construction has not commenced within one-year of City approval for construction inspection, that approval is no longer valid.

The most current editions of the City of San Antonio Standard Specifications and the Texas Department of Transportation Standard Specifications for Construction of Highways, Streets and Bridges shall be followed for all construction except as amended by the City of New Braunfels Standard Details.

All responsibility for the adequacy of these plans remains with the engineer of record. In accepting these plans, the City of New Braunfels must rely upon the adequacy of the work of the engineer of record.

Prior to the start of construction, the contractor shall contact the City of New Braunfels to schedule a preconstruction meeting.

For Public Infrastructure Permit (SC) or Site Prep Permit (SD) Projects:

- For inspections, you must call before 12:00 p.m., 48 hours prior to your inspection
- Each inspection will be allotted 1 hour unless you request for more time.
- Once your request has been accepted, you will receive a call from the City of New Braunfels Inspector.

For Commercial Permit (CP) Projects:

- All inspections are to be called in at 830-221-4068 or,
- Faxed in at 830-608-2117 or.
- E-mailed at inspections@nbtexas.org.

It is the Contractor's responsibility to see that all temporary and permanent traffic control devices are properly installed and maintained in accordance with the plans and latest edition of the Texas Manual on Uniform Traffic Control Devices. If, in the opinion of the engineering representative and the construction inspector, the barricades and signs do not conform to established standards or are incorrectly placed or are insufficient in quantity to protect the general public, the construction inspector shall have the option to stop operations until such time as the conditions are corrected. If the need arises, additional temporary traffic control devices may be ordered by the Engineering representative at the Contractor's expense.

A TxDOT Type II B-B blue reflective raised pavement marker shall be installed in the center of the roadway adjacent to all fire hydrants. In locations where hydrants are situated on corners, blue reflective raised pavement markers shall be installed on both approaches which front the hydrant. The raised pavement marker shall meet TxDOT material, epoxy and adhesive specifications.

(Notes to Be Placed on All WW Plan & Detail Sheets)

Ensure all driveway approaches are built in general accordance with A.D.A. specifications.

No valves, hydrants, etc. shall be constructed within curbs, sidewalks, or driveways.

Signing and Pavement Marking Plan Notes

The Contractor shall furnish and install all regulatory and warning signs, streets name signs and sign mounts in accordance with approved engineering plans. The City will inspect all signs at final inspection.

The Contractor shall install all pavement markings in accordance with approved engineering plans. The Contractor shall notify the City at least twenty-four (24) hours prior to the installation of all sealer and final markings. The City will inspect all markings at final application.

Seeding and Establishment of Vegetation within Earthen Channels, Stormwater Basins and **Disturbed Areas**

Seeding for the purpose of establishing vegetation within constructed earthen channels, basins and disturbed areas shall be conducted in accordance with Item 164 (Seeding for Erosion Control) of TxDOT's Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges manual. Only seed types and mixes specified for the San Antonio District (District 15) in Tables 1 and 2 under Item 164 shall be utilized. During the Cool Season (Sept 1-Nov 30), Cereal Rye and seed species specified for the San Antonio District in Table 3 may be used. For Cool Season seeding applications, cool season seed mixes shall be used in conjunction with seed mixes for the San Antonio District as specified in Table 1 and 2 under Item 164.

It may be deemed necessary to incorporate topsoil and soil amendments (i.e. compost/ fertilizer) into existing soil in order to facilitate vegetation growth. Topsoil, compost and fertilizer additions shall be conducted according to Items 160, 161 and 166 of TxDOT's Standard Specifications manual, respectively.

Watering may also be necessary to facilitate and expedite the sprouting and growth of vegetation. Item 168 of TxDOT's Standard Specifications manual shall be adhered to for vegetative watering.

If extended drought conditions exist that hinder or prohibit the growth and establishment of vegetation, the contract/ developer shall provide a plan to the City of New Braunfels describing the measures that will be taken to stabilize earthen drainage infrastructure until a time when growing conditions become more favorable.

All roadway compaction tests shall be the responsibility of the developer's Geotechnical Engineer. Flexible base or fill/embankment material shall be placed in uniform layers not to exceed eight inches (8") loose. The required density for the fill/embankment material shall meet the requirements of TxDOT's Specification Item 132. The required density for the flexible base material shall meet the requirements of TxDOT's Specification Item 247. Each layer of material, inclusive of subgrade, shall be compacted as specified and tested for density and moisture in accordance with Test Methods TEX-113-E, TEX-114-E, TEX-115-E. The number and location of required tests shall be determined by the Geotechnical Engineer and approved by the City of New Braunfels Street Inspector. At a minimum, tests shall be taken every 200 LF for each lift. Upon completion of testing, the Geotechnical Engineer will provide the City of New Braunfels Street Inspector with all testing documentation and a certification stating that the placement of flexible

- 1. A WRITTEN NOTICE OF CONSTRUCTION MUST BE SUBMITTED TO THE TCEQ REGIONAL OFFICE AT LEAST 48 HOURS PRIOR TO THE START OF ANY REGULATED ACTIVITIES. THIS NOTICE MUST INCLUDE: - THE NAME OF THE APPROVED PROJECT: - THE ACTIVITY START DATE; AND
- 2. ALL CONTRACTORS CONDUCTING REGULATED ACTIVITIES ASSOCIATED WITH THIS PROJECT MUST BE PROVIDED WITH COMPLETE COPIES OF THE APPROVED WATER POLLUTION ABATEMENT PLAN (WPAP) AND THE TCEQ LETTER INDICATING THE SPECIFIC CONDITIONS OF ITS APPROVAL. DURING THE COURSE OF THESE REGULATED ACTIVITIES, THE CONTRACTORS ARE REQUIRED TO KEEP ON-SITE COPIES OF THE APPROVED PLAN AND APPROVAL LETTER.
- 3. IF ANY SENSITIVE FEATURE(S) (CAVES, SOLUTION CAVITY, SINK HOLE, ETC.) IS DISCOVERED DURING CONSTRUCTION. ALL REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MUST BE SUSPENDED IMMEDIATELY. THE APPROPRIATE TCEQ REGIONAL OFFICE MUST BE IMMEDIATELY NOTIFIED OF ANY SENSITIVE FEATURES ENCOUNTERED DURING CONSTRUCTION. CONSTRUCTION ACTIVITIES MAY NOT BE RESUMED UNTIL THE TCEQ HAS REVIEWED AND APPROVED THE APPROPRIATE PROTECTIVE MEASURES IN ORDER TO PROTECT ANY SENSITIVE FEATURE AND THE EDWARDS AQUIFER FROM POTENTIALLY ADVERSE IMPACTS TO WATER QUALITY.
- 4. NO TEMPORARY OR PERMANENT HAZARDOUS SUBSTANCE STORAGE TANK SHALL BE INSTALLED WITHIN 150 FEET OF A WATER SUPPLY SOURCE. DISTRIBUTION SYSTEM, WELL, OR SENSITIVE FEATURE.
- 6. ANY SEDIMENT THAT ESCAPES THE CONSTRUCTION SITE MUST BE COLLECTED AND PROPERLY DISPOSED OF BEFORE THE NEXT RAIN EVENT TO ENSURE IT IS NOT WASHED INTO SURFACE STREAMS, SENSITIVE FEATURES, ETC.
- 7. SEDIMENT MUST BE REMOVED FROM THE SEDIMENT TRAPS OR SEDIMENTATION BASINS NOT LATER THAN WHEN IT OCCUPIES 50% OF THE BASIN'S DESIGN CAPACITY.

CUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL. AERIAL IMAGERY PROVIDED BY GOOGLE© UNLESS OTHERWISE NOTED. Imagery © 2016,CAPCOG,Digital Globe,Texas Orthoimagery Program, USDA Farm Service Agency.

Groundwater

It shall be the responsibility of the developer, contractor, subcontractors, builders, Geo-technical engineer, and project engineer to immediately notify the Office of the City Engineer and project engineer if the presence of groundwater within the site is evident. Upon notification the project engineer shall respond with plan revisions for the mitigation of the groundwater issue. The City Engineer shall respond within two (2) business days upon receipt of the mitigation plan. All construction activity, impacted by the discovery of groundwater, shall be suspended until the City Engineer grants a written approval of the groundwater mitigation plan.

Record Drawings

As per Platting Ordinance Section 118-38m.: When all of the improvements are found to be constructed and completed in accordance with the approved plans and specifications and with the City's standards, and upon receipt of one set of "Record Drawing" plans, and a digital copy of all plans (PDF copy) the City Engineer shall accept such improvements for the City of New Braunfels, subject to the guaranty of material and workmanship provisions in this Section.

Construction Note

Engineer of Record is responsible to ensure that erosion control measures and stormwater control sufficient to mitigate off site impacts are in place at all stages of construction.

Drainage Note

Drainage improvements sufficient to mitigate the impact of construction shall be installed prior to adding impervious cover.

Finished Floor Elevations

The elevation of the lowest floor shall be at least 10 inches above the finished grade of the surrounding ground, which shall be sloped in a fashion so as to direct stormwater away from the structure. Properties adjacent to stormwater conveyance structures must have floor slab elevation or bottom of floor joists a minimum of one foot above the 100-year water flow elevation in the structure. Driveways serving houses on the downhill side of the street shall have a properly sized cross swale preventing runoff from entering the garage.

Soils Testing

Proctors shall be sampled from on-site material (on-site is defined as limits of construction for this -plan set) and a copy of the proctor results shall be delivered to the City of New Braunfels Street Inspector prior to any density tests.

Roadway

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY WATER POLLUTION ABATEMENT PLAN GENERAL CONSTRUCTION NOTES

- THE CONTACT INFORMATION OF THE PRIME CONTRACTOR.

5. PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITY, ALL TEMPORARY EROSION AND SEDIMENTATION (E&S) CONTROL MEASURES MUST BE PROPERLY INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE APPROVED PLANS AND MANUFACTURERS SPECIFICATIONS. IF INSPECTIONS INDICATE A CONTROL HAS BEEN USED INAPPROPRIATELY, OR INCORRECTLY, THE APPLICANT MUST REPLACE OR MODIFY THE CONTROL FOR SITE SITUATIONS. THESE CONTROLS MUST REMAIN IN PLACE UNTIL THE DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.

- 8. LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION CHEMICALS EXPOSED TO STORMWATER SHALL BE PREVENTED FROM BEING DISCHARGED OFFSITE.
- 9. ALL SPOILS (EXCAVATED MATERIAL) GENERATED FROM THE PROJECT SITE MUST BE STORED ON-SITE WITH PROPER E&S CONTROLS. FOR STORAGE OR DISPOSAL OF SPOILS AT ANOTHER SITE ON THE EDWARDS AQUIFER RECHARGE ZONE, THE OWNER OF THE SITE MUST RECEIVE APPROVAL OF A WATER POLLUTION ABATEMENT PLAN FOR THE PLACEMENT OF FILL MATERIAL OR MASS GRADING PRIOR TO THE PLACEMENT OF SPOILS AT THE OTHER SITE.
- 10.IF PORTIONS OF THE SITE WILL HAVE A TEMPORARY OR PERMANENT CEASE IN CONSTRUCTION ACTIVITY LASTING LONGER THAN 14 DAYS, SOIL STABILIZATION IN THOSE AREAS SHALL BE INITIATED AS SOON AS POSSIBLE PRIOR TO THE 14TH DAY OF INACTIVITY. IF ACTIVITY WILL RESUME PRIOR TO THE 21ST DAY, STABILIZATION MEASURES ARE NOT REQUIRED. IF DROUGHT CONDITIONS OR INCLEMENT WEATHER PREVENT ACTION BY THE 14TH DAY, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS POSSIBLE.
- 11. THE FOLLOWING RECORDS SHALL BE MAINTAINED AND MADE AVAILABLE TO THE TCEQ UPON REQUEST: - THE DATES WHEN MAJOR GRADING ACTIVITIES OCCUR;
- THE DATES WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON A PORTION OF THE SITE; AND
- THE DATES WHEN STABILIZATION MEASURES ARE INITIATED.
- 12. THE HOLDER OF ANY APPROVED EDWARD AQUIFER PROTECTION PLAN MUST NOTIFY THE APPROPRIATE REGIONAL OFFICE IN WRITING AND OBTAIN APPROVAL FROM THE EXECUTIVE DIRECTION PRIOR TO INITIATING ANY OF THE FOLLOWING:
- A. ANY PHYSICAL OR OPERATION MODIFICATION OF ANY WATER POLLUTION ABATEMENT STRUCTURE(S), INCLUDING BUT NOT LIMITED TO PONDS, DAMS, BERMS, SEWAGE TREATMENT PLANTS, AND DIVISIONARY STRUCTURES;
- B. ANY CHANGE IN THE NATURE OR CHARACTER OF THE REGULATED ACTIVITY FROM THAT WHICH WAS ORIGINALLY APPROVED OR A CHANGE WHICH WOULD SIGNIFICANTLY IMPACT THE ABILITY OF THE PLAN TO PREVENT POLLUTION OF THE EDWARDS AQUIFER;
- C. ANY DEVELOPMENT OF LAND PREVIOUSLY IDENTIFIED AS UNDEVELOPED IN THE ORIGINAL WATER POLLUTION ABATEMENT PLAN.

SAN ANTONIO REGIONAL OFFICE 14250 JUDSON ROAD SAN ANTONIO, TEXAS 78233-4480 PHONE (210) 490-3096 FAX (210) 545-4329

base, and fill material, and subgrade, has been completed in accordance with the plans. Additional density tests may be requested by the City of New Braunfels Inspector.

Item 340

Asphaltic concrete pavement shall be the type of hot mix asphalt as defined in TxDOT's standard specifications for current TxDOT Standard Specifications for Construction of Highways, Street and Bridges.

The City of New Braunfels will not accept the use of Recycled Asphalt Pavement (RAP) or Recycled Asphalt Shingles (RAS) in asphalt mixtures for new roadways. Any debris inclusions within new asphalt pavements will result in asphalt removal and replacement from curb to curb for limits to be determined by the City of New Braunfels.

The asphaltic concrete pavement surface course shall be plant mixed, hot laid type "D" meeting the specification requirements of TxDOT Item 340. The asphaltic concrete pavement sub-surface courses shall be plant mixed, hot laid type "B" meeting the specification requirements of TxDOT Item 340. The mixture shall be designed per the design requirements specified in TxDOT Item 340 and shall be compacted to between 91 and 95 percent of the maximum theoretical density as determined by TxDOT test method TEX-227-F. Place the mixture when the roadway surface temperature is at or above 60°F. Complete all compaction operations before the pavement temperature drops below 160°F. The asphalt cement content by percent of total mixture weight shall fall within a tolerance of ± 0.5 percent from a specific mix design.

Utility Trench Compaction (added to the construction plans on All Utility Plan Sheets). All utility trench compaction tests within the street pavement/sidewalk section shall be the responsibility of the developer's Geotechnical Engineer. Fill material shall be placed in uniform layers not to exceed twelve inches (12") loose. Determine the maximum lift thickness based on the ability of the compacting operation and equipment used to meet the required density. Each layer of material shall be compacted to a minimum 95% density and tested for density and moisture in accordance with Test Methods TEX-113-E, TEX-114-E, TEX-115-E. The number and location of required tests shall be determined by the Geotechnical Engineer and approved by the City of New Braunfels Street Inspector. At a minimum, tests shall be taken every 200 LF for each lift and every other service line. Upon completion of testing the Geotechnical Engineer shall provide the City of New Braunfels Street Inspector with all testing documentation and a certification stating that the placement of fill material has been completed in accordance with the plans. Additional density tests may be requested by the City of New Braunfels Inspector.

Curb Cut Due to Construction of New Right-Of-Way Construction (Indicate the 2 Options on the construction plans).

1. Sawcut existing street and match to new construction. 2. Sawcut existing curb to tie into existing construction.

Construction Stabilized Entrance Sawcut curb for construction entrance.

Stabilized construction area shall be constructed of 3"x5" rock to be placed a minimum length of 25-ft. and maintained so that construction debris does not fall within the city right-of-way. Rightof-way must be cleared from mud, rocks, etc. at all times.

TXDOT CONSTRUCTION NOTE

1. ALL TRENCHING WITHIN TXDOT R.O.W. FOR WATER INSTALLATION SHALL BE BACKFILLED. COMPACTED. AND TESTED PER TXDOT STANDARD SPECIFICATIONS UNLESS OTHERWISE SHOWN ON PLANS.



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VERAMENDI OFFSITE WATER LINE New BRAUNFELS, TEXAS GENERAL NOTES 2

NBU WATER NOTES

- 1. ALL WATER MAINS SHALL BE AWWA C900 (CLASS 150 OR GREATER).
- 2. WATER SERVICES SHALL BE SINGLE 1" COPPER TUBING.
- 3. WATER LINE IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE NBU SYSTEMS CONNECTION & CONSTRUCTION POLICY.
- 4. WATER MAIN SHALL HAVE A MINIMUM OF 42 INCHES OF COVER, OTHERWISE CONCRETE ENCASEMENT
- WILL BE REQUIRED. 5. EACH UNIT IN A DUPLEX, TRIPLEX, FOURPLEX, OR CONDOMINIUM SHALL BE PROVIDED WITH AN INDIVIDUAL WATER METER. A MASTER METER CAN BE CONSIDERED FOR SEPARATE BUILDINGS, HOWEVER, THOSE BUILDINGS MUST BE PLUMBED TO ALLOW SEPARATE METERS FOR FUTURE CONSIDERATION.
- 6. CONTRACTOR WILL KEEP THE AREA ON TOP OF AND AROUND THE WATER METER BOX FREE OF ALL OBJECTS AND DEBRIS.
- 7. INITIAL BACKFILL OF WATER LINES SHALL BE MANUFACTURED SAND OR PEA GRAVEL AS PER NBU SYSTEMS CONNECTION & CONSTRUCTION POLICY.
- 8. SECONDARY BACKFILL OF WATER LINES SHALL GENERALLY CONSIST OF MATERIAL REMOVED FROM THE TRENCH AND SHALL BE FREE FROM BRUSH, DEBRIS AND TRASH OR STONES HAVING ANY DIMENSION LARGER THAN 6" INCHES AT THE LARGEST DIMENSION.
- 9. HYDROSTATIC TESTING IS DONE FROM VALVE TO VALVE.
- 10. NO METER BOXES TO BE SET IN DRIVEWAYS OR SIDEWALKS. ANY METER BOXES SET IN DRIVEWAYS OR SIDEWALKS WILL BE RELOCATED AT CONTRACTOR'S AND/OR DEVELOPER'S EXPENSE.
- 11. METER BOXES MUST BE SET AT THE PROPOSED GRADE. ANY METER BOXES THAT ARE NOT SET AT THE FINAL GRADE WILL BE ADJUSTED AT CONTRACTOR'S AND/OR DEVELOPER'S EXPENSE.
- 12. ACCEPTABLE METER BOXES ARE D13-BAMR AND D15-BAMR. NEW RESIDENTIAL LOTS ARE REQUIRED TO USE THE D15-BAMR METER BOXES (DOUBLE AMR). COMMERCIAL LOTS SHOULD CHOOSE WHICH BOX APPLIES TO THE DOMESTIC AND/OR IRRIGATION METER LAYOUT.
- 13. THRUST BLOCKS WILL NOT BE ALLOWED ON THE SYSTEM WITHOUT SPECIAL APPROVAL. JOINTS WILL BE RESTRAINED WITH RESTRAINING SYSTEMS APPROVED BY NBU AND RESTRAINT LENGTH SHALL BE SUBMITTED TO NBU AT THE TIME OF PLAN SUBMITTAL.
- 14. CONTRACTOR SHALL PLACE TRACER WIRE ON TOP OF THE WATER MAINS. TRACER WIRE SHOULD RUN FROM VALVE TO VALVE AND EXIT AT THE VALVE BOX. THE TRACER WIRE SHOULD BE ATTACHED TO THE TOP OF THE PIPE USING TAPE. EXCESS WIRE SHOULD BE LEFT WITHIN VALVE BOXES TO BE PLACED WITHIN LID OF COVER.
- 15. WATER QUALITY SHALL BE PROTECTED WITH APPROPRIATE BACKFLOW PREVENTION ASSEMBLIES INSTALLED ON ALL IRRIGATION SYSTEMS, FIRE SUPPRESSION SYSTEMS AND MULTI-UNIT COMPLEXES ALONG WITH MULTI-LEVEL PROPERTIES ON THE DOMESTIC METER CONTAINMENT. NBU CAN ASSIST WITH THE DECISION ON APPROPRIATE BACKFLOW ASSEMBLIES ON A CASE BY CASE BASIS. CONTACT NBU BACKFLOW PREVENTION SPECIALIST FOR MORE DETAILS. EMAIL QUESTIONS TO CROSSCONNECTION@NBUTEXAS.COM
- 16. ALL BACKFLOW PREVENTION ASSEMBLIES SHALL BE TESTED UPON INSTALLATION AND REPORT SENT TO NBU VIA THE ONLINE TRACKING SYSTEM, CONTACT NBU BACKFLOW PREVENTION SPECIALIST FOR MORE DETAILS. EMAIL QUESTIONS TO CROSSCONNECTION@NBUTEXAS.COM

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17. ALL RESIDENTIAL AND COMMERCIAL PROPERTIES SHALL HAVE A CUSTOMER SERVICE INSPECTION CERTIFICATE (CSI INSPECTION) COMPLETED UPON COMPLETION OF THE BUILDING OR HOME STRUCTURE. CONTACT NBU BACKFLOW PREVENTION SPECIALIST FOR MORE DETAILS. EMAIL QUESTIONS TO CROSSCONNECTION@NBUTEXAS.COM

<u>Utility Key Legend</u> Record Drawings & NBU GIS Not field located

 (0	HE)	Overhead I
		- Undergrour
	(UE)	Undergrour
		Water line
	(WL)	Water line
 	- (WWL)	Wastewate
	171.0	Wastewate

Electric (Primary) Electric (Secondary) und Electric (Primary) und Electric (Secondary) (Main) (Lateral) r Line (Main) Wastewater Line (Force Main)



M.&P.R.C.C.T..... M.&P.R.G.C.T..... 0.P.R.C.C.T. 0.P.R.G.C.T. D.R.C.G.T.Deed Records of Guadalupe County, Texas

N.B.U. CAD DELIVERABLES

PLEASE NOTE: NBU REQUIRES GPS POINTS FOR CERTAIN ELECTRIC, WATER, AND WASTEWATER ATTRIBUTES, SOME OF WHICH MUST BE TAKEN PRIOR TO BACKFILL DURING CONSTRUCTION.

GPS POINTS SHALL BE REQUIRED FROM THE DEVELOPER'S CONTRACTOR OR ENGINEER. A MINIMUM OF THREE COORDINATE POINTS FOR GEOREFERENCING SHALL BE REQUIRED. THE WATER AND WASTEWATER GPS POINTS SHALL BE TO SURVEY GRADE. THE ELECTRIC GPS POINTS SHALL BE TO MAP GRADE. WATER

VERTICAL BENDS AND EDGE OF STEEL CASING (IF APPLICABLE) PRIOR TO BACKFILL

HORIZONTAL BENDS PRIOR TO BACKFILL TEES PRIOR TO BACKFILL

FITTINGS (REDUCERS AND COUPLINGS) PRIOR TO BACKFILL

FIRE HYDRANTS (TOP OF FLANGE) VALVES

METERS (TOP CENTER OF BOX)

BLOW OFF ASSEMBLY

CORNER SLAB OF WATER TANK & GATE VALVE ON WATER TANK WASTEWATER

MANHOLES CLEANOUTS

CORNER SLAB OF LIFT STATION

ELECTRIC POLES

TRANSFORMERS, BOTH ABOVE AND UNDERGROUND (FRONT LOCK) PULL BOXES

STREET LIGHTS COORDINATE GPS REQUIREMENTS WITH NBU INSPECTOR



	Key Legend
	Overhead Utility Line
	Motel Cuerd Bail
	Metal Guara Rall
	Fence (Cable and Post)
	Chainlink Fence
	Fence Rod Iron
GAS GAS GAS	Gas Line
	Edge of Asphalt
·	Back of Curb
	Edge of Concrete
	Centerline of Road
431+00	Slope Bottom (Grade)
	Slope Top (Grade)
	Gutter Flowline
*	Right of Way (Existing)
ő. 	Property Line
20' UTILITY EASEMENT	Property Line (Calculated)
25' BUILDING SETBACK LINE	Utility Easement
	Building Setback Line
	Underground Electric
	Underground Telephone
01	RetainintedWilletal Pipe
	Billboard or Sign
WWI	Underground Wastewater Line
	Underground Drain Pipe
Asphalt	Concrete
	(
	Proposed
Gravel	5' Utility
	Easement
Key Legend: OHE Overhead Telephone/CATV OHO Metal Guard Rail X Fence Fence Fence (Cable and Post) Cool Chainlink Fence Fence Fence Rod Iron Gas Line Edge of Asphalt Back of Curb Edge of Concrete Centerline of Road Slope Bottom (Grade) Slope Top (Grade) Gutter Flowline Building Setback Line Utility Easement UE Underground Electric UT Underground Electric UT Underground Electric UT Underground Telephone Billboard or Sign Underground Drain Pipe Asphalt Concrete Froposed 5' Utility Easement Easement	
	Existing
Area	Building
M&PRCCTMap &	Plat Records of Comal County. Texas
M.&P.R.G.C.T	Plat Records of Guadalupe County. Texas (
0.P.R.C.C.TOfficial	Public Records of Comal County, Texas
O.P.R.G.C.TOfficial	Public Records of Guadalupe County, Texas
D.R.C.C.TDeed Re	ecords of Comal County, Texas

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2	<u>Symbol Legend:</u>
0	1/2 Inch Iron Rod Set with Orange
~	Plastic Cap "Urban Civil"
<u>6</u>	PK Nail Set in Concrete
•	1/2 Inch Iron Rod Found
	1/2 Inch Iron Rod with Plastic Cap
0	5/8 Inch Iron Rod Found
a	3/4 Inch Iron Rod Found
ē	1" Pipe Found
õ	PK Nail Found
\$	Magnesium Nail Found
•	60d Nail Found
	Square Tube Found
8	Axle Found
×	Rail Road Spike Found
	TxDot Concrete Right of way Marker (Type 1)
	TxDot Concrete Right of way Marker (Type 2)
	Conduit Telephone
•	Conduit Flectric
	Pull Box
-	BillBoard
	Gas Meter
Č.	Power Pole
0	Guy Wire
alle.	Power Pole (Traffic Signal)
Å.	Fire Hydrant
×	Water Valve
	Vent Pipe Water Meter Box
8	Sprinkler Valve
¢	Faucet
Dc.o.	Cleanout
0-	Single Pole Sign
X	Mail Box
¢.	Light Pole
*	Control Point (Urban Civil) Bollard
	Telephone Box
S	Wastewater Manhole
D	Storm Sewer Manhole
0	Telephone Manhole
8	Electric Meter
	Junction Box (Electric)
3	Iree

PROPOSED LINETYPE

w	— w —	- PROPOSED	WATER LINE
		PROPOSED	CUT AND RESTORE /CURB
		PROPOSED	CASING/ENCASEMENT



JASON T. DIAMONI

96532

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6-20-23

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PAPE-DAWS



OVERALL QUANTITY TABLE	
DESCRIPTION	
Trench Excavation Protection	LI
16" PVC C900 Class 235 (Open Cut)	LI
16" Gate Valve (MJ) with 6" Valve Box, Complete	E
Air Release Valve	E
Drain Valve Assembly	E
Fire Hydrant Assembly	E,
2" Permanent Blow-Off Assembly	E,
Revegetation	S
Mobilization	LS
Preparation of Right-of-Way	LS





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DESIGNER

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ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH

AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS.

SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT

TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS

GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN

AND AROUND TRENCH EXCAVATION.



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HORIZONTAL SCALE: 1" = 50'



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HORIZONTAL SCALE: 1" = 50'



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COMAL COUNT	SITE $SITE$	NO REVISION	JASON T. I BOLSSIONAL BOLSSIONAL C-20-	DIAMOND 2 5EP. Marine Diamond 2-3
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	LEGEND	PROJECT LIMITS EXISTING CONT 100-YR FEMA FLOW ARROW (SILT FENCE ROCK BERM BLIEDERS CREE (POTENTIAL WO LIMITS OF DIST STABILIZED CO ENTRANCE/EXI CONSTRUCTION MATERIALS STO (FIELD LOCATE) CONCRETE TRU (FIELD LOCATE)	S OUR FLOODPLAIN (EXISTING) EXISTING) URBED AREA DUS) URBED AREA NSTRUCTION T EQUIPMENT, VEHICLE & DRAGE AREA) ICK WASH-OUT PIT)	FI PAPE-DAWSON FI ENGINEERS	SAN ANTONIO I AUSTIN I HOUSTON I FORT WORTH I DALLAS 2000 NW LOOP 410 I SAN ANTONIO, TX 78213 I 210.375.9000 TEXAS ENGINEERING FIRM #470 I TEXAS SURVEVING FIRM #10028800
	1. DO NOT DISTURB VEGETATED ANY MORE THAN NECESSARY FOR 2. CONSTRUCTION ENTRANCE/EXI CONSTRUCTION EQUIPMENT AND	AREAS (TREES, GRA R CONSTRUCTION. IT LOCATION, CONCF MATERIAL STORAGE	ASS, WEEDS, BRUSH, ETC.) RETE WASH-OUT PIT, AND YARD TO BE DETERMINED		
MATCHLINE STA 61+00 SEE SHEET C5.03	 IN THE FIELD. 3. STORM WATER POLLUTION MODIFIED IN THE FIELD TO MODIFICATIONS ARE TO BE NOTE BY THE RESPONSIBLE PARTY. 4. RESTRICT ENTRY/EXIT TO TH BY USE OF ADEQUATE FENCING, 5. ALL STORM WATER POLLU MAINTAINED AND IN WORKING CO 6. FOR A COMPLETE LISTING PREVENTION CONTROLS REFER PREVENTION PLAN. 7. STORM WATER POLLUTION CONSTRUCTED WITHIN THE SITE MAY BE SHOWN OUTSIDE THE S CLARITY. 8. AS SOON AS PRACTICAL, COVERED BY IMPERVIOUS COVE AREAS, EMBANKMENT SLOPES, PROJECT SPECIFICATIONS. 9. BEST MANAGEMENT PRACTICES WITH THE DISTURBANCE OF UPGE 10. BEST MANAGEMENT PRACTICES WITH THE DISTURBANCE OF UPGE 10. BEST MANAGEMENT PRACTICES WITH THE DISTURBANCE OF UPGE 11. UPON COMPLETION OF THE F BEFORE FINAL PAYMENT IS I SEDIMENT AND EROSION CONTRO ROCK BERMS IN DRAINAGE FEATU 12. WHERE VEGETATED FILTER VERIFY THAT SUFFICIENT VEGETA PLACE SILT FENCING IN LIEU OF 13. SHADED AREA DENOTES LIMIT WITHIN THE PROJECT LIMITS, WITH EQUIPMENT AND MATERIAL STOR, STORM WATER POLLUTION PRACE ISTURBED BY CIVIL CONSTRUCTI ACTIVITIES WILL REQUIRE A SEPA PLAN. 14. PRIOR TO BEGINNING CONST PLACEMENT OF TEMPORARY BE RIGHT-OF-WAY WITH TXDOT. 15. CPS ENERGY MAY FUNCTION PROJECT AND MAY BE INST CONSTRUCTION AND OFF-SITE FE 16. PER TPDES REQUIREMENTS. 	PREVENTION CONTR ACCOMPLISH THE D ON THIS EXHIBIT E PROJECT SITE TO IF NECESSARY. TION PREVENTION NDITIONS AT ALL TH OF TEMPORARY S TO THE TPDES S N PREVENTION ST BOUNDARIES. SC TO THE TPDES S N PREVENTION ST BOUNDARIES. SC TE BOUNDARIES. ON ALL DISTURBED S ER SUCH AS PARIETC. WILL BE STA S MAY BE INSTALLED RADIENT AREAS. S MAY BE INSTALLED RADIENT AREAS. S MAY BE REMOVED CONTROLLED BY THE O IN ACCORDANCE W PROJECT, INCLUDING SSUED, CONTRACTO L MEASURES, PAYIN JRES. STRIPS ARE INDICA. TON EXISTS, OTHER VEGETATED FILTER IS OF DISTURBED AN THE EXCEPTION O AGE YARD, ARE NOT NTION PLAN (SWP3) ON ACTIVITIES. HOU RATE STORM WATER STRUCTION, CONTRACTO CALLING ELECTRIC ED TO THE PROJEC DISTURBED AREAS	ROLS MAY NEED TO BE DESIRED EFFECT. ALL AND SIGNED AND DATED O DESIGNATED LOCATIONS CONTROLS ARE TO BE MES. STORM WATER POLLUTION STORM WATER POLLUTION TRUCTURES SHOULD BE OME OF THESE FEATURES N THIS PLAN FOR VISUAL OIL THAT WILL NOT BE KWAY AREAS, EASEMENT BILIZED PER APPLICABLE D IN STAGES TO COINCIDE D IN STAGES ONCE THE E BEST MANAGEMENT WITH TPDES SITE STABILIZATION, AND DR SHALL REMOVE ALL IG SPECIAL ATTENTION TO TED, CONTRACTOR SHALL STRIP. REAS. OTHER AREAS F A CONSTRUCTION A PART OF THIS TPDES AND WILL NOT BE JSE CONSTRUCTION COR SHALL COORDINATE POLLUTION PREVENTION CTOR SHALL COORDINATE PRACTICES WITHIN TXDOT ARY OPERATOR ON THIS UTILITIES FOR ON-SITE T. ON WHICH CONSTRUCTION	VERAMENDI OFFSITE WATER LINE New BRAUNFELS, TEXAS	STORMWATER POLLUTION PREVENTION PLAN STA 41+00 TO STA 61+00
	ACTIVITIES HAVE CEASED (TE STABILIZED WITHIN 14 DAYS U SEEDING DOES NOT CONSTITUTE THE ENGINEERING SEAL HAS BEI	MPORARILY OR PE NLESS ACTIVITY RE AS STABILIZATION.	SHEET ONLY FOR THE	PLAT NO.	
	PURPOSE OF DEMONSTRATING C SIZING AND TREATMENT REQUIRE ENVIRONMENTAL QUALITY'S EDW/ THIS SHEET HAS BEEN PREPARE	OMPLIANCE WITH TH EMENTS OF THE TEX ARDS AQUIFER TECH	E POLLUTION ABATEMENT AS COMMISSION ON NICAL GUIDANCE MANUAL.	DATE JU DESIGNER	NE 2023 CN DRAWN P1
	OF POLLUTION ABATEMENT ONLY CIVIL ENGINEERING RELATED INFO BE ACQUIRED FROM THE APPRO THE CIVIL IMPROVEMENT PLANS.	7. ALL OTHER ORMATION SHOULD PRIATE SHEET IN	EXHIBIT 2		5.02

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LEGEND LEGEND LEGEND LOCATION MAP NOT-TO-SCALE PROJECT LIMITS EXISTING CONTORPIAN NOT-TO-SCALE PROJECT LIMITS EXISTING CONTORPIAN DOT ABOVE (FYRETAR)	AMOND Diamond
LEGEND 	r.J
-\\-\\-\\-\\-\\- SILT FENCE ROCK BERM BLIEDERS CREEK CENTERLINE (POTENTIAL WOTUS) LIMITS OF DISTURBED AREA Image: Stabilized construction ENTRANCE/EXIT	SAN ANTONIO I AUSTIN I HOUSTON I FORT WORTH I DALLAS 2000 NW LOOP 410 I SAN ANTONIO, TX 78213 I 210.375.9000 TEXAS ENGINEERING FIRM #470 I TEXAS SURVEYING FIRM #10028800
1. DO NOT DESTURB EGETATED AREAS (TREES ORASS, WEEDS, BRUSH, ETC.) ANY WORE THAN NECESSARY FOR CONSTRUCTION. 2. CONSTRUCTION ENTRANCE/28T LOCATION, CONCRETE WASH-OUT PIT, AND CONSTRUCTION EQUIPMENT AND MATERIAL STORAGE YARD TO BE DETERMINED IN THE FIELD. 3. STORM WATER POLLUTION PREVENTION CONTROLS MAY NEED TO BE MODIFED IN THE FIELD TO ACCOMPLISH THE DESIRED EFFECT. ALL MODIFED IN THE FIELD TO ACCOMPLISH THE DESIRED AND AND AND BY THE RESPONSIBLE PART. 4. RESTRUCT ENTRY/EXIT TO THE PROJECT SITE TO DESIGNATED LOCATIONS BY USE OF ADEQUATE FENONG, IF NECESSARY. 5. ALL STORM WATER POLLUTION PREVENTION CONTROLS ARE TO BE MAINTAINED AND IN WORKING CONDITIONS AT ALL TIMES. 6. FOR A COMPLETE USING OF TEMPORARY STORM WATER POLLUTION PREVENTION PLAN. 7. STORM WATER POLLUTION PREVENTION STRUCTURES SHOULD BE CONSTRUCTED WITHIN THE SITE BOUNDARIES. SOME OF THESE FEATURES MAINTAINED WITH THE SITE BOUNDARIES. SOME OF THESE FEATURES MODIFIED WITHIN THE SITE BOUNDARIES. SOME OF THESE FEATURES MODIFIED TO THAT PORTION CONTROLL BE STARILIZED FER APPLICABLE MARGED FOR THAT PORTION CONTROLL BE STARILIZED FER APPLICABLE MAINTAINED FOR THAT PORTION CONTROLL BE STARILIZED FER APPLICABLE SEDUREMENT AND EROSION CONTROL MAY BE REMOVED IN STAGES ONCE THE WATERSHED FOR THAT PORTION CONTROLL BE STARILIZED FOR THE MARGES FERANCES IN DRAINAGE FURCES. 10. BEST MANAGEMENT PRACTICES MAY BE REMOVED IN STAGES ONCE THE WATERSHED FOR THAT PORTION CONTROLL BE STARILIZED FOR THE MARGES IN DRAINAGE FERTURES. ONTROL READURES FAMIN	STORMWATER POLLUTION PREVENTION PLAN STA 61+00 TO STA 81+00
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Distorber bit divid construction activities. House construction Activities will require a separate storm water pollution prevention PLAN. IIII PRIOR TO BEGINNING CONSTRUCTION, CONTRACTOR SHALL COORDINATE PLACEMENT OF TEMPORARY BEST MANAGEMENT PRACTICES WITHIN TXDOT RIGHT-OF-WAY WITH TXDOT. 15. CPS ENERGY MAY FUNCTION AS A SECONDARY OPERATOR ON THIS PROJECT AND MAY BE INSTALLING ELECTRIC UTILITIES FOR ON-SITE CONSTRUCTION AND OFF-SITE FEED TO THE PROJECT. 16. PER TPDES REQUIREMENTS, DISTURBED AREAS ON WHICH CONSTRUCTION ACTIVITIES HAVE CEASED (TEMPORARILY OR PERMANENTLY) SHALL BE STABILIZED WITHIN 14 DAYS UNLESS ACTIVITY RESUMES WITHIN 21 DAYS. SEEDING DOES NOT CONSTITUTE AS STABILIZATION. THE ENGINEERING SEAL HAS BEEN AFFIXED TO THIS SHEET ONLY FOR THE PURPOSE OF DEMONSTRATING COMPLIANCE WITH THE POLLUTION ABATEMENT	201-46

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DATE	SIGNATURE	DESCRIPTION		
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	COMAL COUNTY COUNTY SITE	DATE
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	CITY OF NEW BRAUNFELS	NO.
4	LOCATION MAP NOT-TO-SCALE	JASON T. DIAMOND
	SCALE: $1'' = 50'$	Jason T. Winmond
760. 760.		6-20-23
	LEGEND PROJECT LIMITS	DALLAS 0028800
		WSC RS I WORTH I 8213 I 210.3 EVING FIRM #1
	-//-//-//- SILT FENCE ROCK BERM	FEDA NEE
	BLIEDERS CREEK CENTERLINE (POTENTIAL WOTUS)	APE VGI STIN I HOL
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	GENERAL NOTES 1. DO NOT DISTURB VEGETATED AREAS (TREES, GRASS, WEEDS, BRUSH, ETC.) ANY MORE THAN NECESSARY FOR CONSTRUCTION.	
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	4. RESTRICT ENTRY/EXIT TO THE PROJECT SITE TO DESIGNATED LOCATIONS BY USE OF ADEQUATE FENCING, IF NECESSARY.5. ALL STORM WATER POLLUTION PREVENTION CONTROLS ARE TO BE MAINTAINED AND IN WORKING CONDITIONS AT ALL TIMES.	ER L
	6. FOR A COMPLETE LISTING OF TEMPORARY STORM WATER POLLUTION PREVENTION CONTROLS REFER TO THE TPDES STORM WATER POLLUTION PREVENTION PLAN.	
	7. STORM WATER POLLUTION PREVENTION STRUCTURES SHOULD BE CONSTRUCTED WITHIN THE SITE BOUNDARIES. SOME OF THESE FEATURES MAY BE SHOWN OUTSIDE THE SITE BOUNDARIES ON THIS PLAN FOR VISUAL CLARITY.	
	8. AS SOON AS PRACTICAL, ALL DISTURBED SOIL THAT WILL NOT BE COVERED BY IMPERVIOUS COVER SUCH AS PARKWAY AREAS, EASEMENT AREAS, EMBANKMENT SLOPES, ETC. WILL BE STABILIZED PER APPLICABLE PROJECT SPECIFICATIONS.	TO ELS,
	9. BEST MANAGEMENT PRACTICES MAY BE INSTALLED IN STAGES TO COINCIDE WITH THE DISTURBANCE OF UPGRADIENT AREAS.	
	WATERSHED FOR THAT PORTION CONTROLLED BY THE BEST MANAGEMENT PRACTICES HAS BEEN STABILIZED IN ACCORDANCE WITH TPDES REQUIREMENTS.	POLI POLI
	11. UPON COMPLETION OF THE PROJECT, INCLUDING STIE STABILIZATION, AND BEFORE FINAL PAYMENT IS ISSUED, CONTRACTOR SHALL REMOVE ALL SEDIMENT AND EROSION CONTROL MEASURES, PAYING SPECIAL ATTENTION TO ROCK BERMS IN DRAINAGE FEATURES.	
	12. WHERE VEGETATED FILTER STRIPS ARE INDICATED, CONTRACTOR SHALL VERIFY THAT SUFFICIENT VEGETATION EXISTS, OTHERWISE CONTRACTOR SHALL PLACE SILT FENCING IN LIEU OF VEGETATED FILTER STRIP. 1.3. SHADED AREA DENOTES LIMITS OF DISTURBED AREAS. OTHER AREAS	MM/P
	WITHIN THE PROJECT LIMITS, WITH THE EXCEPTION OF A CONSTRUCTION EQUIPMENT AND MATERIAL STORAGE YARD, ARE NOT A PART OF THIS TPDES STORM WATER POLLUTION PREVENTION PLAN (SWP3) AND WILL NOT BE DISTURBED BY CIVIL CONSTRUCTION ACTIVITIES. HOUSE CONSTRUCTION ACTIVITIES WILL REQUIRE A SEPARATE STORM WATER POLLUTION PREVENTION PLAN.	ERA STOF
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	THE ENGINEERING SEAL HAS BEEN AFFIXED TO THIS SHEET ONLY FOR THE PURPOSE OF DEMONSTRATING COMPLIANCE WITH THE POLLUTION ABATEMENT	JOB NO. <u>30001-46</u>
	SIZING AND TREATMENT REQUIREMENTS OF THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY'S EDWARDS AQUIFER TECHNICAL GUIDANCE MANUAL.	DATE JUNE 2023 DESIGNER CN

DIVERSION RIDGE >2% GRADE PUBLIC ROAD DIVERSION RIDGE -GEOTEXTILE FABRIC T GEOTEXTILE FABRIC TO STABILIZE FOUNDATION STABILIZE FOUNDATION 4" TO 8" COARSE_ AGGREGATE SCHEMATIC OF TEMPORARY SECTION "A-A" OF A CONSTRUCTION ENTRANCE/EXIT CONSTRUCTION ENTRANCE/EXIT MATERIALS COMMON TROUBLE POINTS THE AGGREGATE SHOULD CONSIST OF 4-INCH TO 8-INCH WASHED STONE 1. INADEQUATE RUNOFF CONTROL-SEDIMENT WASHES ONTO PUBLIC ROAD. OVER A STABLE FOUNDATION AS SPECIFIED IN THE PLAN. . STONE TOO SMALL OR GEOTEXTILE FABRIC ABSENT, RESULTS IN MUDDY 2. THE AGGREGATE SHOULD BE PLACED WITH A MINIMUM THICKNESS OF CONDITION AS STONE IS PRESSED INTO SOIL. 8-INCHES. . PAD TOO SHORT FOR HEAVY CONSTRUCTION TRAFFIC-EXTEND PAD BEYOND 3. THE GEOTEXTILE FABRIC SHOULD BE DESIGNED SPECIFICALLY FOR USE AS THE MINIMUM 50-FOOT LENGTH AS NECESSARY. A SOIL FILTRATION MEDIA WITH AN APPROXIMATE WEIGHT OF 6 OZ/YD2, A 4. PAD NOT FLARED SUFFICIENTLY AT ROAD SURFACE, RESULTS IN MUD BEING MULLEN BURST RATING OF 140 LB/IN², AND AN EQUIVALENT OPENING SIZE TRACKED ON TO ROAD AND POSSIBLE DAMAGE TO ROAD. GREATER THAN A NUMBER 50 SIEVE 5. UNSTABLE FOUNDATION - USE GEOTEXTILE FABRIC UNDER PAD AND/OR 4. IF A WASHING FACILITY IS REQUIRED, A LEVEL AREA WITH A MINIMUM OF IMPROVE FOUNDATION DRAINAGE. 4-INCH DIAMETER WASHED STONE OR COMMERCIAL ROCK SHOULD BE INCLUDED IN THE PLANS. DIVERT WASTEWATER TO A SEDIMENT TRAP OF INSPECTION AND MAINTENANCE GUIDELINES BASIN. THE ENTRANCE SHOULD BE MAINTAINED IN A CONDITION. WHICH WILL INSTALLATION PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. . AVOID CURVES ON PUBLIC ROADS AND STEEP SLOPES. REMOVE THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES VEGETATION AND OTHER OBJECTIONABLE MATERIAL FROM THE FOUNDATION AREA. GRADE CROWN FOUNDATION FOR POSITIVE DRAINAGE. USED TO TRAP SEDIMENT 2. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC 2. THE MINIMUM WIDTH OF THE ENTRANCE/EXIT SHOULD BE 12 FEET OR THE RIGHTS-OF-WAY SHOULD BE REMOVED IMMEDIATELY BY CONTRACTOR. FULL WIDTH OF EXIT ROADWAY, WHICHEVER IS GREATER. 3. WHEN NECESSARY, WHEELS SHOULD BE CLEANED TO REMOVE SEDIMENT 3. THE CONSTRUCTION ENTRANCE SHOULD BE AT LEAST 50 FEET LONG. PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY. 4. IF THE SLOPE TOWARD THE ROAD EXCEEDS 2%. CONSTRUCT A RIDGE 4. WHEN WASHING IS REQUIRED, IT SHOULD BE DONE ON AN AREA STABILIZED 6-INCHES TO 8-INCHES HIGH WITH 3:1 (H:V) SIDE SLOPES, ACROSS THE FOUNDATION APPROXIMATELY 15 FEET FROM THE ENTRANCE TO DIVERT WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN RUNOFF AWAY FROM THE PUBLIC ROAD. 5. ALL SEDIMENT SHOULD BE PREVENTED FROM ENTERING ANY STORM DRAIN, 5. PLACE GEOTEXTILE FABRIC AND GRADE FOUNDATION TO IMPROVE STABILITY, DITCH OR WATER COURSE BY USING APPROVED METHODS. ESPECIALLY WHERE WET CONDITIONS ARE ANTICIPATED. 6. PLACE STONE TO DIMENSIONS AND GRADE SHOWN ON PLANS. LEAVE SURFACE SMOOTH AND SLOPE FOR DRAINAGE. 7. DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE STONE PAD TO A SEDIMENT TRAP OR BASIN. PIPE UNDER PAD AS NEEDED TO MAINTAIN PROPER PUBLIC ROAD 8. INSTALL DRAINAGE STABILIZED CONSTRUCTION ENTRANCE/EXIT DETAIL NOT-TO-SCALE HOOTS OR GRASS BLADES. GRASS SHOULD BE GREEN AND HEALTHY: MOWED AT A 2"-3" CUTTING HEIGHT. -THATCH- GRASS CLIPPINGS AND CORRECT DEAD LEAVES, UP TO 1/2" THICK. LAY SOD IN A STAGGERED PATTERN. BUTT THE STRIPS TIGHTLY AGAINST EACH OTHER. ROOT ZONE - SOIL AND ROOTS. SHOULD BE 1/2"-3/4" THICK, WITH DO NOT LEAVE SPACES AND DO NOT DENSE ROOT MAT FOR STRENGTH. OVERLAP. A SHARPENED MASON'S TROWEL IS A HANDY TOOL FOR TUCKING DOWN THE APPEARANCE OF GOOD SOD ENDS AND TRIMMING PIECES. INCORRECT ANGLED ENDS CAUSED BY THE 1. ROLL SOD IMMEDIATELY TO ACHIEVE FIRM CONTACT WITH THE AUTOMATIC SOD CUTTER MUST BE MATCHED SOIL. SOD INSTALLATION CORRECTLY. 2. WATER TO A DEPTH OF 4" AS NEEDED. WATER WELL AS SOON AS THE SOD IS LAID. 3. MOW WHEN THE SOD IS ESTABLISHED - IN 2-3 WEEKS. SET THE MOWER HIGH (2"-3"). LAY SOD ACROSS THE DIRECTION OF FLOW PEG OR STAPLE USE PEGS OR STAPLES TO FASTEN SOD FIRMLY - AT THE ENDS OF STRIPS AND IN THE CENTER, OR EVERY 3-4 FEET IF THE STRIPS ARE LONG. WHEN READY TO MOW. DRIVE PEGS OR STAPLES FLUSH IN CRITICAL AREAS, SECURE SOD WITH THE GROUND. WITH NETTING. USE STAPLES. MATERIALS GENERAL INSTALLATION (VA. DEPT. OF **CONSERVATION**, 1992 1. SOD SHOULD BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4" INCH (± 1/4" INCH) AT THE TIME OF CUTTING. THIS THICKNESS SHOULD EXCLUDE SOD SHOULD NOT BE CUT OR LAID IN EXCESSIVELY WET OR DRY WEATHER. SHOOT GROWTH AND THATCH. SOD ALSO SHOULD NOT BE LAID ON SOIL SURFACES THAT ARE FROZEN. 2. PIECES OF SOD SHOULD BE CUT TO THE SUPPLIER'S STANDARD WIDTH AND 2. DURING PERIODS OF HIGH TEMPERATURE, THE SOIL SHOULD BE LIGHTLY LENGTH, WITH A MAXIMUM ALLOWABLE DEVIATION IN ANY DIMENSION OF 5%. IRRIGATED IMMEDIATELY PRIOR TO LAYING THE SOD, TO COOL THE SOIL AND TORN OR UNEVEN PADS SHOULD NOT BE ACCEPTABLE. REDUCE ROOT BURNING AND DIEBACK. STANDARD SIZE SECTIONS OF SOD SHOULD BE STRONG ENOUGH TO FIRST ROW OF SOD SHOULD BE LAID IN A STRAIGHT LINE WITH SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUBSEQUENT ROWS PLACED PARALLEL TO AND BUTTING TIGHTLY AGAINST EACH SUSPENDED FROM A FIRM GRASP ON ONE END OF THE SECTION. OTHER. LATERAL JOINTS SHOULD BE STAGGERED TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. CARE SHOULD BE EXERCISED TO ENSURE THAT SOD 4. SOD SHOULD BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT OF 36 HOURS. IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE DRYING OF THE ROOTS (SEE FIGURE ABOVE) 4. ON SLOPES 3:1 OR GREATER, OR WHEREVER EROSION MAY BE A PROBLEM, SITE PREPARATION SOD SHOULD BE LAID WITH STAGGERED JOINTS AND SECURED BY STAPLING OF OTHER APPROVED METHODS. SOD SHOULD BE INSTALLED WITH THE LENGTH PRIOR TO SOIL PREPARATION, AREAS TO BE SODDED SHOULD BE BROUGHT PERPENDICULAR TO THE SLOPE (ON CONTOUR). TO FINAL GRADE IN ACCORDANCE WITH THE APPROVED PLAN. 5. AS SODDING OF CLEARLY DEFINED AREAS IS COMPLETED, SOD SHOULD BE THE SURFACE SHOULD BE CLEARED OF ALL TRASH, DEBRIS AND OF ALL ROOTS, BRUSH, WIRE, GRADE STAKES AND OTHER OBJECTS THAT WOULD ROLLED OR TAMPED TO PROVIDE FIRM CONTACT BETWEEN ROOTS AND SOIL. INTERFERE WITH PLANTING, FERTILIZING OR MAINTENANCE OPERATIONS. AFTER ROLLING, SOD SHOULD BE IRRIGATED TO A DEPTH SUFFICIENT THAT THE UNDERSIDE OF THE SOD PAD AND THE SOIL 4 INCHES BELOW THE SOD IS FERTILIZE ACCORDING TO SOIL TESTS. FERTILIZER NEEDS CAN BE DETERMINED BY A SOIL TESTING LABORATORY OR REGIONAL RECOMMENDATIONS THOROUGHLY WET. CAN BE MADE BY COUNTY AGRICULTURAL EXTENSION AGENTS. FERTILIZE UNTIL SUCH TIME A GOOD ROOT SYSTEM BECOMES DEVELOPED, IN THE SHOULD BE WORKED INTO THE SOIL TO A DEPTH OF 3 INCHES WITH A DISC, SPRINGTOOTH HARROW OR OTHER SUITABLE EQUIPMENT. ON SLOPING LAND, THE ABSENCE OF ADEQUATE RAINFALL, WATERING SHOULD BE PERFORMED AS OFTEN AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF AT LEAST 4 FINAL HARROWING OR DISCING OPERATION SHOULD BE ON THE CONTOUR. 8. THE FIRST MOWING SHOULD NOT BE ATTEMPTED UNTIL THE SOD IS FIRMLY ROOTED, USUALLY 2-3 WEEKS. NOT MORE THAN ONE THIRD OF THE GRASS **INSTALLATION IN CHANNELS** LEAF SHOULD BE REMOVED AT ANY ONE CUTTING. SOD STRIPS IN WATERWAYS SHOULD BE LAID PERPENDICULAR TO THE DIRECTION OF FLOW. CARE SHOULD BE TAKEN TO BUTT ENDS OF STRIPS TIGHTLY (SEE FIGURE ABOVE). INSPECTION AND MAINTENANCE GUIDELINES 2. AFTER ROLLING OR TAMPING, SOD SHOULD BE PEGGED OR STAPLED TO SOD SHOULD BE INSPECTED WEEKLY AND AFTER EACH RAIN EVENT TO RESIST WASHOUT DURING THE ESTABLISHMENT PERIOD. MESH OR OTHER LOCATE AND REPAIR ANY DAMAGE. NETTING MAY BE PEGGED OVER THE SOD FOR EXTRA PROTECTION IN CRITICAL

SOD INSTALLATION DETAIL

SOON AS PRACTICAL.

2. DAMAGE FROM STORMS OR NORMAL CONSTRUCTION ACTIVITIES SUCH AS TIRE RUTS OR DISTURBANCE OF SWALE STABILIZATION SHOULD BE REPAIRED AS

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NOT-TO-SCALE

AREAS.

ISOMETRIC PLAN VIEW

ROCK BERMS

THE PURPOSE OF A ROCK BERM IS TO SERVE AS A CHECK DAM IN AREAS OF CONCENTRATED FLOW, TO INTERCEPT SEDIMENT-LADEN RUNOFF, DETAIN THE SEDIMENT AND RELEASE THE WATER IN SHEET FLOW. THE ROCK BERM SHOULD BE USED WHEN THE CONTRIBUTING DRAINAGE AREA IS LESS THAN 5 ACRES. ROCK BERMS ARE USED IN AREAS WHERE THE VOLUME OF RUNOFF IS TOO GREAT FOR A SILT FENCE TO CONTAIN. THEY ARE LESS EFFECTIVE FOR SEDIMENT REMOVAL THAN SILT FENCES, PARTICULARLY FOR FINE PARTICLES, BUT ARE ABLE TO WITHSTAND HIGHER FLOWS THAN A SILT FENCE. AS SUCH, ROCK BERMS ARE OFTEN USED IN AREAS OF CHANNEL FLOWS (DITCHES, GULLIES, ETC.). ROCK BERMS ARE MOST EFFECTIVE AT REDUCING BED LOAD IN CHANNELS AND SHOULD NOT BE SUBSTITUTED FOR OTHER EROSION AND SEDIMENT CONTROL MEASURES FARTHER UP THE WATERSHED.

INSPECTION AND MAINTENANCE GUIDELINES

. INSPECTION SHOULD BE MADE WEEKLY AND AFTER EACH RAINFALL BY THE RESPONSIBLE PARTY. FOR INSTALLATIONS IN STREAMBEDS, ADDITIONAL DAILY INSPECTIONS SHOULD BE MADE.

2. REMOVE SEDIMENT AND OTHER DEBRIS WHEN BUILDUP REACHES 6 INCHES AND DISPOSE OF THE ACCUMULATED SILT IN AN APPROVED MANNER THAT WILL NOT CAUSE ANY ADDITIONAL SILTATION. 3. REPAIR ANY LOOSE WIRE SHEATHING.

4. THE BERM SHOULD BE RESHAPED AS NEEDED DURING INSPECTION

5. THE BERM SHOULD BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.

6. THE ROCK BERM SHOULD BE LEFT IN PLACE UNTIL ALL UPSTREAM AREAS ARE STABILIZED AND ACCUMULATED SILT REMOVED.

SECTION "A-A'

MATERIALS

THE BERM STRUCTURE SHOULD BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM OPENING OF 1 INCH AND A MINIMUM WIRE DIAMETER OF 20 GAUGE GALVANIZED AND SHOULD BE SECURED WITH SHOAT RINGS.

2. CLEAN, OPEN GRADED 3-INCH TO 5-INCH DIAMETER ROCK SHOULD BE USED, EXCEPT IN AREAS WHERE HIGH VELOCITIES OR LARGE VOLUMES OF FLOW ARE EXPECTED, WHERE 5-INCH TO 8-INCH DIAMETER ROCKS MAY BE USED

INSTALLATION

1. LAY OUT THE WOVEN WIRE SHEATHING PERPENDICULAR TO THE FLOW LINE. THE SHEATHING SHOULD BE 20 GAUGE WOVEN WIRE MESH WITH 1 INCH OPENINGS.

2. BERM SHOULD HAVE A TOP WIDTH OF 2 FEET MINIMUM WITH SIDE SLOPES BEING 2:1 (H:V) OR FLATTER. 3. PLACE THE ROCK ALONG THE SHEATHING AS SHOWN IN THE DIAGRAM TO

A HEIGHT NOT LESS THAN 18" 4. WRAP THE WIRE SHEATHING AROUND THE ROCK AND SECURE WITH TIE WIRE SO THAT THE ENDS OF THE SHEATHING OVERLAP AT LEAST 2 INCHES,

AND THE BERM RETAINS ITS SHAPE WHEN WALKED UPON. 5. BERM SHOULD BE BUILT ALONG THE CONTOUR AT ZERO PERCENT GRADE

OR AS NEAR AS POSSIBLE 6. THE ENDS OF THE BERM SHOULD BE TIED INTO EXISTING UPSLOPE GRADE

AND THE BERM SHOULD BE BURIED IN A TRENCH APPROXIMATELY 3 TO 4 INCHES DEEP TO PREVENT FAILURE OF THE CONTROL.

COMMON TROUBLE POINTS

. INSUFFICIENT BERM HEIGHT OR LENGTH (RUNOFF QUICKLY ESCAPES OVER THE TOP OR AROUND THE SIDES OF BERM).

2. BERM NOT INSTALLED PERPENDICULAR TO FLOW LINE (RUNOFF ESCAPING AROUND ONE SIDE).

SILT FENCE

A SILT FENCE IS A BARRIER CONSISTING OF GEOTEXTILE FABRIC SUPPORTED BY METAL POSTS TO PREVENT SOIL AND SEDIMENT LOSS FROM A SITE. WHEN PROPERLY USED, SILT FENCES CAN BE HIGHLY EFFECTIVE AT CONTROLLING SEDIMENT FROM DISTURBED AREAS. THEY CAUSE RUNOFF TO POND, ALLOWING HEAVIER SOLIDS TO SETTLE OUT. IF NOT PROPERLY INSTALLED, SILT FENCES ARE NOT LIKELY TO BE EFFECTIVE.

THE PURPOSE OF A SILT FENCE IS TO INTERCEPT AND DETAIN WATER-BORN SEDIMENT FROM UNPROTECTED AREAS OF A LIMITED EXTENT. SILT FENCE IS USED DURING THE PERIOD OF CONSTRUCTION NEAR THE PERIMETER OF A DISTURBED AREA TO INTERCEPT SEDIMENT WHILE ALLOWING WATER TO PERCOLATE THROUGH. THIS FENCE SHOULD REMAIN IN PLACE UNTIL THE DISTURBED AREA IS PERMANENTLY STABILIZED. SILT FENCE SHOULD NOT BE USED WHERE THERE IS A CONCENTRATION OF WATER IN A CHANNEL OF DRAINAGE WAY. IF CONCENTRATED FLOW OCCURS AFTER INSTALLATION, CORRECTIVE ACTION MUST BE TAKEN SUCH AS PLACING A ROCK BERM IN THE AREAS OF CONCENTRATED FLOW.

SILT FENCING WITHIN THE SITE MAY BE TEMPORARILY MOVED DURING THE DAY TO ALLOW CONSTRUCTION ACTIVITY PROVIDED IT IS REPLACED AND PROPERLY ANCHORED TO THE GROUND AT THE END OF THE DAY. SILT FENCES ON THE PERIMETER OF THE SITE OR AROUND DRAINAGE WAYS SHOULD NOT BE MOVED AT ANY TIME.

MATERIALS

SILT FENCE MATERIAL SHOULD BE POLYPROPYLENE, POLYETHYLENE, OR POLYAMIDE WOVEN OR NONWOVEN FABRIC. THE FABRIC SHOULD BE 36 INCHES, WITH A MINIMUM UNIT WEIGHT OF 4.5 OZ/YD, MULLEN BURST STRENGTH EXCEEDING 190 LB/IN2, ULTRAVIOLET STABILITY EXCEEDING 70%, AND MINIMUM APPARENT OPENING SIZE OF U.S. SIEVE NUMBER 30.

. FENCE POSTS SHOULD BE MADE OF HOT ROLLED STEEL, AT LEAST 4 FEET LONG WITH TEE OR Y-BAR CROSS SECTION, SURFACE PAINTED OR GALVANIZED, MINIMUM WEIGHT 1.25 LB/FT, AND BRINDELL HARDNESS EXCEEDING 140.

3. WOVEN WIRE BACKING TO SUPPORT THE FABRIC SHOULD BE GALVANIZED 2" X 4" WELDED WIRE, 12 GAUGE MINIMUM.

INSTALLATION

1. STEEL POSTS, WHICH SUPPORT THE SILT FENCE, SHOULD BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POSTS MUST BE EMBEDDED A MINIMUM OF 1-FOOT DEEP AND SPACED NOT MORE THAN 8 FEET ON CENTER. WHERE WATER CONCENTRATES, THE MAXIMUM SPACING SHOULD BE 6 FEET.

2. LAY OUT FENCING DOWN-SLOPE OF DISTURBED AREA, FOLLOWING THE CONTOUR AS CLOSELY AS POSSIBLE. THE FENCE SHOULD BE SITED SO THAT THE MAXIMUM DRAINAGE AREA IS 1/4 ACRE/100 FEET OF FENCE.

3. THE TOE OF THE SILT FENCE SHOULD BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWN-SLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CANNOT BE TRENCHED IN (E.G., PAVEMENT OR ROCK OUTCROP), WEIGHT FABRIC FLAP WITH 3 INCHES OF PEA GRAVEL ON UPHILL SIDE TO PREVENT FLOW FROM SEEPING UNDER FENCE.

4. THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.

SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IS IN TURN ATTACHED TO THE STEEL FENCE POST. THERE SHOULD BE A 3-FOOT OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET

6. SILT FENCE SHOULD BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

COMMON TROUBLE POINTS FENCE NOT INSTALLED ALONG THE CONTOUR CAUSING WATER TO

CONCENTRATE AND FLOW OVER THE FENCE. 2. FABRIC NOT SEATED SECURELY TO GROUND (RUNOFF PASSING UNDER

FENCE).

3. FENCE NOT INSTALLED PERPENDICULAR TO FLOW LINE (RUNOFF ESCAPING AROUND SIDES)

4. FENCE TREATING TOO LARGE AN AREA, OR EXCESSIVE CHANNEL FLOW (RUNOFF OVERTOPS OR COLLAPSES FENCE).

INSPECTION AND MAINTENANCE GUIDELINES 1. INSPECT ALL FENCING WEEKLY, AND AFTER RAINFALL.

2. REMOVE SEDIMENT WHEN BUILDUP REACHES 6 INCHES.

3. REPLACE TORN FABRIC OR INSTALL A SECOND LINE OF FENCING PARALLEL TO THE TORN SECTION.

4. REPLACE OR REPAIR SECTIONS CRUSHED OR COLLAPSED IN THE COURSE OF CONSTRUCTION ACTIVITY. IF A SECTION OF FENCE IS OBSTRUCTING VEHICULAR ACCESS, CONSIDER RELOCATING IT TO A SPOT WHERE IT WILL PROVIDE EQUAL PROTECTION, BUT WILL NOT OBSTRUCT VEHICLES. A TRIANGULAR FILTER DIKE MAY BE PREFERABLE TO A SILT FENCE AT COMMON VEHICLE ACCESS POINTS.

WHEN CONSTRUCTION IS COMPLETE, THE SEDIMENT SHOULD BE DISPOSED OF IN A MANNER THAT WILL NOT CAUSE ADDITIONAL SILTATION AND THE PRIOR LOCATION OF THE SILT FENCE SHOULD BE REVEGETATED. THE FENCE ITSELF SHOULD BE DISPOSED OF IN AN APPROVED LANDFILL.

SAND BAGS (TYP.)

FROM STORM WATER RUNOFF.

SILT FENCE DETAIL

NOT-TO-SCALE