NEW BRAUNFELS FIRE TRAINING SITE INFRASTRUCTURE

353 FM 306
NEW BRAUNFELS, TX 77130

BRW PROJECT NO.: 219065.00
11/01/2022

OWNER	**CITY OF NEW BRAUNFELS** 550 LANDA STREET NEW BRAUNFELS, TX 78130 830.221.4000
ARCHITECT	**BROWN REYNOLDS WATFORD ARCHITECTS, INC.** 175 CENTURY SQUARE DRIVE, SUITE 350 COLLEGE STATION, TX 77840 979.694.1791
CIVIL ENGINEER	**GESSNER ENGINEERING, LLC** 2501 ASHFORD DRIVE, SUITE 102 COLLEGE STATION, TX 77840 979.680.8840
MECHANICAL / ELECTRICAL / PLUMBING ENGINEER	**DAWSON VAN ORDEN ENGINEERING** 100 COMMONS ROAD, SUITE 11 DRIPPING SPRINGS, TX 78620 281.293.7500

SYMBOL LEGEND

PLAN / TRUE — NORTH ARROWS

ARTIFICIAL PROPERTY LINE / LIMITS OF CONSTRUCTION

BUILDING SETBACK LINE/EASEMENT

100 — EXISTING CONTOURS

100 — REVISED CONTOURS

100 — EXISTING SPOT GRADE

100 — REVISED SPOT GRADE

WORKING POINT, CONTROL OR DATUM POINT

0 — COLUMN DESIGNATION

1 / A1.2 — DETAIL BUBBLE

1 / A1.2 — BUILDING SECTION

1 / A1.2 — WALL SECTION

1" — FACE OF FINISH DIMENSIONING

MATCH LINE

1 TITLE / SCALE — VIEW TITLE

A1.2 / 1 — EXTERIOR ELEVATION

3 / A1.2 / 1 — INTERIOR ELEVATION

3111.10 — KEYNOTE

A1 — WALL TYPE

101 — DOOR NUMBER

A — WINDOW TYPE

1 — REVISIONS

ROOM NAME / C101B — ROOM NAME DESIGNATION & NUMBER

CEILING FINISH
WALL FINISH
BASE FINISH
FLOOR FINISH

NEW CONSTRUCTION

2 — NEW FIRE RATED CONSTRUCTION

EXISTING WALL TO REMAIN

ALIGN

TEMPERED GLASS

A/1.1 — REFERENCES:
SHEET NUMBER
DETAIL NUMBER

A1.1 — SHEET NUMBERING:
SHEET NUMBER
SHEET TYPE DESIGNATOR
DISCIPLINE DESIGNATOR

ARCHITECTURAL ABBREVIATIONS

A.F.F.	ABOVE FINISH FLOOR	MNTD.	MOUNTED
B.O.	BOTTOM OF	NOM.	NOMINAL
C.J.	CONTROL JOINT	N.I.C.	NOT IN CONTRACT
CLR	CLEAR	O.C.(E.W.)	ON CENTER (EACH WAY)
DIA.	DIAMETER	O.H.	OPPOSITE HAND
DN	DOWN	RE:	REFERENCE
E.J.	EXPANSION JOINT	REQ./REQD	REQUIRED
EQ.	EQUAL	R.O.	ROUGH OPENING
F.F.	FINISH FLOOR	SIM.	SIMILAR
F.V.	FIELD VERIFY	T.O.	TOP OF
GA.	GAUGE	TYP.	TYPICAL
M.O.	MASONRY OPENING	W/	WITH
MAX.	MAXIMUM	W.B.	WIND BRACE
MIN.	MINIMUM	W.P	WORKING POINT

SITE INFORMATION

CALLED 35.452 ACRE TRACT OUT OF THE HENRY FOSTER SURVEY NO. 34, A-154
DOC. NO. 200106037693
O.P.R.C.C.T.

THIS SITE IS NOT LOCATED IN THE EDWARDS AQUIFER ZONE

TYPE DEVELOPMENT CATEGORY: TYPE 3

THIS PROPERTY FALLS WITHIN ZONE X AND HAS LESS THAN 1% ANNUAL CHANCE OF FLOOD HAZARD ACCORDING TO THE FEMA FIRM MAP FOR COMAL COUNTY, CITY OF NEW BRAUNFELS, TEXAS, COMMUNITY MAP NO. 485493, PANEL NO. 0445F, MAP NO. 48091C0445F, REVISED EFFECTIVE DATE OF SEPTEMBER 2, 2009.

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

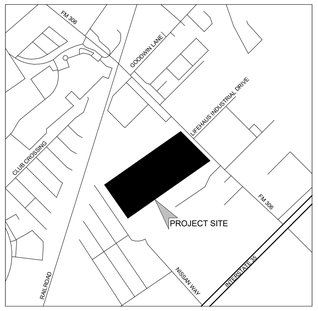
GPS POINTS SHALL BE REQUIRED FROM THE DEVELOPERS CONTRACTOR OR ENGINEER.
A MINIMUM OF THREE COORDINATE POINTS FOR GEOREFERENCING SHALL BE REQUIRED.
THE WATER AND WASTEWATER GPS POINTS SHALL BE TO SURVEY GRADE.
THE ELECTRIC GPS POINTS SHALL BE TO MAP GRADE.

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

WASTEWATER
MANHOLES
CLEANOUTS
CORNER SLAB OF LIFT STATION

ELECTRIC
POLES
TRANSFORMERS, BOTH ABOVE AND UNDERGROUND (FRONT LOCK)

COORDINATE GPS WITH NBU INSPECTOR



VICINITY MAP

0' 50' 100' 200'

NOTES

ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER OF RECORD. IN ACCEPTING THESE PLANS, THE NEW BRAUNFELS MUST RELY UPON THE ADEQUACY OF THE WORK OF THE ENGINEER OF RECORD.

IF CONSTRUCTION HAS NOT COMMENCED WITHIN ONE-YEAR OF CITY APPROVAL FOR CONSTRUCTION INSPECTION, THAT APPROVAL IS NO LONGER VALID.

GAS UTILITIES ARE NOT INCLUDED IN THE CIVIL CONSTRUCTION PLANS. FINAL GAS UTILITY DESIGN SHALL BE APPROVED BY THE CITY FOR ANY WORK WITHIN THE PUBLIC RIGHT-OF-WAY.

AREA TABULATION

ALL SITE AND BUILDING AREA TABULATIONS SHOWN ARE FOR OWNER AND GOVERNING AUTHORITY REFERENCES ONLY. CONTRACTOR IS RESPONSIBLE FOR MAKING THEIR OWN QUANTITY AND AREA CALCULATIONS.

BID ALTERNATES

DEDUCT ALTERNATE 1:
REMOVE 2,000 GALLON PROPANE TANK

DEDUCT ALTERNATE 2:
REMOVE ADDITIONAL DRIVING COURSE PAVEMENT

DEDUCT ALTERNATE 3:
DELETE NEW 12" STORMWATER LIFT STATION DUAL PUMP CONFIGURATION

DEDUCT ALTERNATE 4:
DELETE NEW STORMWATER LIFT STATION 17-4" OUTSIDE DIAMETER REINFORCED CONCRETE WET WELL

DEDUCT ALTERNATE 5:
DELETE 16" DUCTILE IRON PIPE

DEDUCT ALTERNATE 6:
DELETE GENERATOR AND ELECTRICAL CONDUIT TO PROVIDE EMERGENCY POWER FOR STORMWATER LIFT STATION

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AS1.3	ARCHITECTURAL SITE PLAN & DETAILS
AS1.4	ARCHITECTURAL SITE PLAN & DETAILS
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L1.4	LANDSCAPE AND IRRIGATION DETAILS
MEP1.0	MEP SITE PLAN
MEP2.0	MEP SITE PLAN - LIFT STATION
MEP2.1	MEP ONE-LINE - LIFT STATION
E2.1	ELECTRICAL SINGLE LINE

REGISTERED ARCHITECT RAWN HOLLIDAY 18837 STATE OF TEXAS
11/01/2022

BROWN REYNOLDS WATFORD ARCHITECTS
175 CENTURY SQUARE DRIVE
SUITE 350
COLLEGE STATION, TEXAS 77840
979.694.1791
WWW.BRWARCH.COM

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NEW BRAUNFELS, TX 77130

NO.	REVISION	DATE
1		

G1.1

TITLE SHEET AND DRAWING INDEX

MASTER KEYNOTE LIST

0100	DIVISION 01 - GENERAL REQUIREMENTS
0200	DIVISION 02 - EXISTING CONDITIONS (TO REMAIN, U.N.O.) & DEMOLITION
0220.03	EXISTING POWER POLE
0300	DIVISION 03 - CONCRETE
0310.02	3/4" CHAMFER
0320.02	STEEL REINFORCING (RE: STRUCTURAL)
0320.03	DOWEL SLEEVE AND END CAP
0330.01	CONCRETE (RE: STRUCTURAL)
0330.05	CONCRETE GRADE BEAM (RE: STRUCTURAL)
0330.07	CONCRETE FOOTING (RE: STRUCTURAL)
0360.03	FILL WITH GROUT
0400	DIVISION 04 - MASONRY
0420.02	HORIZONTAL REINFORCING AT 16" O.C. VERTICALLY
0420.14	8" CONCRETE MASONRY UNITS
0420.24	VERTICAL REINFORCING IN CONCRETE MASONRY UNITS (RE: STRUCTURAL)
0440.07	STONE VENEER
0470.06	CAST STONE CAP - PIN BOLT CONNECTIONS
0500	DIVISION 05 - METALS
0550.11	4" X 4" X 1/4" STEEL TUBE
0550.19	6" PIPE BOLLARD. FILL WITH CONCRETE
0550.30	1/4" STEEL PLATE
0550.33	METAL LADDER
0550.71	1 1/2" STANDARD STEEL PIPE GUARDRAIL (3'-6" HIGH)
0550.72	GUARDRAIL MOUNTING BRACKETS
0550.73	1 1/2" STANDARD STEEL PIPE HANDRAIL
0550.74	1" STANDARD STEEL PIPE HANDRAIL
0550.78	3" X 3" SQUARE TUBING GATE FRAME
0600	DIVISION 06 - WOOD, PLASTICS, & COMPOSITES
0700	DIVISION 07 - THERMAL & MOISTURE PROTECTION
0710.01	BITUMINOUS DAMPPROOFING
0725.01	UNDERSLAB VAPOR BARRIER
0760.01	THROUGH-WALL FLASHING (WITH WEEPS AT 2'-0" O.C.) AND MORTAR NET
0790.01	SEALANT WITH BACKER ROD AS REQUIRED
0800	DIVISION 08 - OPENINGS
0870.12	PANIC HARDWARE DEVICE
0900	DIVISION 09 - FINISHES
0990.02	ELASTOMERIC COATING
0990.03	POWDER COATING
1000	DIVISION 10 - SPECIALTIES
1010.33	POLE MOUNTED SIGNAGE - "RESERVED PARKING" (RE: 3/AC1.2)
1010.34	POLE MOUNTED SIGNAGE - "VAN-ACCESSIBLE" (RE: 3/AC1.2)
1100	DIVISION 11 - EQUIPMENT
1180.01	DUMPSTER (N.I.C.)
1200	DIVISION 12 - FURNISHINGS
1300	DIVISION 13 - SPECIAL CONSTRUCTION
1400	DIVISION 14 - CONVEYING EQUIPMENT
2100	DIVISION 21 - FIRE SUPPRESSION (RE: PLUMBING)
2200	DIVISION 22 - PLUMBING (RE: PLUMBING)
2300	DIVISION 23 - HEATING, VENTILATING, & AIR-CONDITIONING (HVAC) (RE: MECHANICAL)
2600	DIVISION 26 - ELECTRICAL (RE: ELECTRICAL)
2620.01	CONDUIT
2650.17	LIGHT POLE / FIXTURE ON CONCRETE BASE
2650.20	DIRECT BURIAL LIGHT POLE/FIXTURE
2700	DIVISION 27 - COMMUNICATIONS
2800	DIVISION 28 - ELECTRONIC SAFETY & SECURITY
2810.03	CARD READER
2810.09	SLIDING GATE OPERATOR
3100	DIVISION 31 - EARTHWORK
3110.05	TRIM / PRUNE EXISTING TREES
3120.01	GRADE
3120.02	COMPACTED SELECT FILL
3120.03	COMPACTED SUBGRADE
3120.04	EARTH
3200	DIVISION 32 - EXTERIOR IMPROVEMENTS
3210.09	CONCRETE SIDEWALK (RE: CIVIL)
3210.10	CONCRETE CURB RAMP PER CITY REQUIREMENTS
3210.11	ACCESSIBLE CONCRETE CURB RAMP WITH INTEGRAL COLOR CONCRETE AND TACTILE WARNING SURFACE
3210.14	CONCRETE PAVING (RE: CIVIL)
3210.16	CONCRETE DUMPSTER PAD
3210.22	PAVING EXPANSION JOINT - FILL WITH JOINT SEALER 1/4" BELOW SURFACE
3210.24	PRE-CAST CONCRETE PAVING UNITS WITH TRUNCATED DOMES (ADA COMPLIANT)
3210.30	6" CONCRETE CURB (WITH GUTTER AS REQUIRED) (RE: CIVIL)
3210.33	4" PAVEMENT MARKING (DIAGONAL STRIPING AT 2'-0" O.C. TYPICAL)
3210.34	ACCESSIBLE PAVEMENT MARKING
3210.35	FIRE LANE STRIPING PER CITY REQUIREMENTS
3210.37	WHEEL STOP (6'-0" LONG). DRILL AND DOWEL INTO PAVING
3210.39	CONCRETE SIDEWALK (RE: CIVIL)
3210.40	STEEL REINFORCING (RE: CIVIL)
3210.41	SAW CUT CONTROL JOINT
3210.42	LIGHT BROOM FINISH
3210.43	3/4" DOWEL @ 12" O.C.
3210.47	CONCRETE
3210.49	STEEL TROWEL FINISH TYPICAL
3210.50	PAVING EXPANSION JOINT (RE: CIVIL)
3230.01	6'-0" NOM. CHAIN-LINK FENCE
3230.06	4'-0" WIDE CHAIN-LINK GATE
3230.10	2 1/2" DIAMETER SCHEDULE 40 STEEL PIPE (GALVANIZED)
3230.11	6 5/8" DIAMETER STEEL PIPE (GALVANIZED)
3230.17	CHAIN-LINK FABRIC (VINYL COATED)
3230.28	HEAVY DUTY OFFSET TYPE HINGES
3230.33	GATE ROLLER
3230.35	POST CAP
3230.38	DECORATIVE METAL FENCE
3230.39	DECORATIVE METAL GATE
3230.40	4" X 4" STEEL TUBE POST
3230.42	3" X 3" X 1/4" STEEL POST WITH ORNAMENTAL IRON CAP
3230.48	HEAVY DUTY METAL HINGES
3230.51	CAST-IN-PLACE CONCRETE RETAINING WALL
3230.54	POWDER COATING
3230.55	6" X 6" X 3/16" STEEL POST WITH ORNAMENTAL IRON CAP
3230.56	VEHICLE DETECTION LOOP
3230.57	1" SQUARE TUBING
3230.58	METAL GATE V-TRACK
3230.59	1" HEXAGONAL WIRE MESH
3230.61	1/2" WEEP HOLES @ 48" O.C.
3230.63	SAND BACKFILL WITH GEOTEXTILE FABRIC
3230.64	CANE BOLT FROM 5/8" SS ROUND BAR
3230.65	EMBEDMENT STEEL SLEEVE
3230.71	MOTORIZED CHAIN LINK GATE
3230.72	PRECAST CONCRETE FENCE
3290.03	1/8" X 4" METAL EDGING
3290.05	RUBBER TIE
3290.06	TREE GUY
3290.07	COLORED FLAG
3290.08	MULCH
3290.09	RIVER ROCK
3290.10	ROOT BALL
3290.11	PREPARED SOIL MIX
3290.12	CRUSHED STONE
3290.13	STEEL STAKE
3290.14	WOOD STAKE
3290.15	BARK MULCH
3290.16	3" PERFORATED PVC PIPE WITH CAP
3300	DIVISION 33 - UTILITIES (RE: CIVIL & MEP)
3310.01	FIRE HYDRANT (RE: CIVIL / PLUMBING)
3340.05	CONCRETE CATCH BASIN (RE: CIVIL)
3340.13	FILTER FABRIC
3340.15	STORM WATER DETENTION POND (RE: CIVIL)
3340.18	GEOTEXTILE: TURN UP AT EDGES
3370.01	POWER POLE
3370.08	BARE COPPER GROUND
3370.09	COPPER GROUND ROD (8'-0" LONG)
3370.10	PVC FOR CONDUIT

MASTERFORMAT 2016

THE MASTER KEYNOTE LIST USES CSI MASTERFORMAT 2016 EDITION LEVEL 2 NUMBERS AND TITLES

EXAMPLE KEYNOTE	DIVISION	3400 LEVEL 2	TRANSPORTATION UNIQUE IDENTIFIER
0960.01	09	60	.01

DIVISION 01	**GENERAL REQUIREMENTS**
DIVISION 02	**EXISTING CONDITIONS (TO REMAIN, U.N.O.) & DEMOLITION**
DIVISION 03	**CONCRETE**
DIVISION 04	**MASONRY**
DIVISION 05	**METALS**
DIVISION 06	**WOOD, PLASTICS, & COMPOSITES**
DIVISION 07	**THERMAL & MOISTURE PROTECTION**
DIVISION 08	**OPENINGS**
DIVISION 09	**FINISHES**
DIVISION 10	**SPECIALTIES**
DIVISION 11	**EQUIPMENT**
DIVISION 12	**FURNISHINGS**
DIVISION 13	**SPECIAL CONSTRUCTION**
DIVISION 14	**CONVEYING EQUIPMENT**
DIVISION 21	**FIRE SUPPRESSION (RE: PLUMBING)**
DIVISION 22	**PLUMBING (RE: PLUMBING)**
DIVISION 23	**HEATING, VENTILATING, & AIR-CONDITIONING (HVAC) (RE: MECHANICAL)**
DIVISION 26	**ELECTRICAL (RE: ELECTRICAL)**
DIVISION 27	**COMMUNICATIONS**
DIVISION 28	**ELECTRONIC SAFETY & SECURITY**
DIVISION 31	**EARTHWORK**
DIVISION 32	**EXTERIOR IMPROVEMENTS**
DIVISION 33	**UTILITIES (RE: CIVIL & MEP)**

BROWN REYNOLDS WATFORD ARCHITECTS
175 CENTURY SQUARE DRIVE
SUITE 330
DUNCANVILLE, TEXAS 75140
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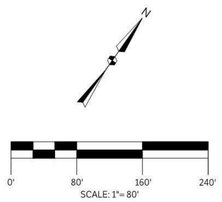
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CHECKED BY RH, MW
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G1.2

MASTER KEYNOTE LIST



BENCHMARK 1:

MAG NAIL WITH SHINER IN CONCRETE, STAMPED "DAM=5348 CONTROL" FOUND IN THE SOUTHEAST ENTRANCE, APPROXIMATELY 28.2 FEET NORTH OF A POWER POLE.

ELEVATION = 677.60'

BENCHMARK 2:

SQUARE CUT IN SOUTHWEST CORNER OF A HEADWALL OF A DRAINAGE STRUCTURE, LOCATED AT THE SOUTH END OF THE DETENTION POND.

ELEVATION = 672.90'

BENCHMARK 3:

SQUARE CUT IN THE NORTH END OF A CONCRETE TRANSFORMER PAD NEXT TO A PARKING LOT, SOUTH OF THE 1-STORY BUILDING.

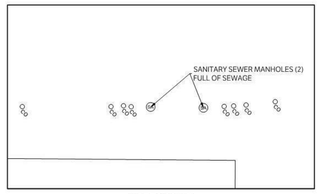
ELEVATION = 679.26'

TREE	Description
60106	7" LIVE OAK
60107	4" LIVE OAK
60108	6" LIVE OAK
60109	9" CEDAR ELM
60110	5" CEDAR ELM
60111	7" CEDAR ELM
60112	6" POST OAK
60113	7" POST OAK
60453	10" LIVE OAK
60454	10" LIVE OAK
60455	10" LIVE OAK
60665	12" LIVE OAK
60666	6" LIVE OAK
60667	8" LIVE OAK
60668	8" LIVE OAK
60669	7" CEDAR ELM
60670	8" CEDAR ELM
60671	6" CEDAR ELM
60726	9" LIVE OAK
60738	10" POST OAK
60739	10" POST OAK
61031	6" LIVE OAK
61032	8" LIVE OAK
61311	10" POST OAK
61314	11" POST OAK
61357	8" POST OAK
70585	11" LIVE OAK
70586	6" LIVE OAK
70589	4" CYPRESS
70590	9" CYPRESS
70591	10" CYPRESS
70592	5" CYPRESS
70593	6" CYPRESS
70595	13" LIVE OAK
70596	13" LIVE OAK
70597	12" LIVE OAK
70598	10" CYPRESS
70599	8" CYPRESS
70600	6" CYPRESS
70601	4" CYPRESS

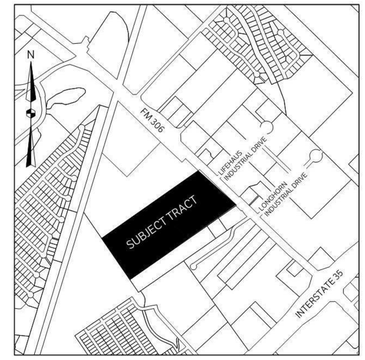
TREE	Description
70607	13" MULBERRY
70608	9" MULBERRY
70609	11" LIVE OAK
70610	11" LIVE OAK
70611	9" LIVE OAK
70612	8" ELM
70613	8" ELM
70614	7" ELM
70615	7" ELM
70616	7" ELM
70617	5" CYPRESS
70618	6" CYPRESS
70619	7" CYPRESS
70620	8" ELM
70626	8" RED OAK
70627	8" POST OAK
70628	6" POST OAK
70629	8" POST OAK
70630	6" POST OAK
70631	10" LIVE OAK
70632	7" LIVE OAK
70633	7" LIVE OAK
70774	13" ELM
70786	13" ELM
71491	12" POST OAK
71492	12" POST OAK
71687	10" POST OAK
71688	10" POST OAK
71823	10" LIVE OAK
71865	14" LIVE OAK
71956	13" ELM
72167	11" LIVE OAK
72168	11" LIVE OAK
72302	16" COTTONWOOD
72874	10" LIVE OAK
72875	13" LIVE OAK
72876	11" LIVE OAK
72955	14" PIN OAK
73159	9" POST OAK
73160	12" POST OAK
80000	12" POST OAK

CAUTION: CONTACT THE TEXAS EXCAVATION SAFETY SYSTEM (DIG-TESS) AT 1-800-344-8377 TO LOCATE EXISTING UTILITIES PRIOR TO CONSTRUCTION. CONTACT GESSNER ENGINEERING IF CONFLICTS OCCUR.

DETAIL 'A'

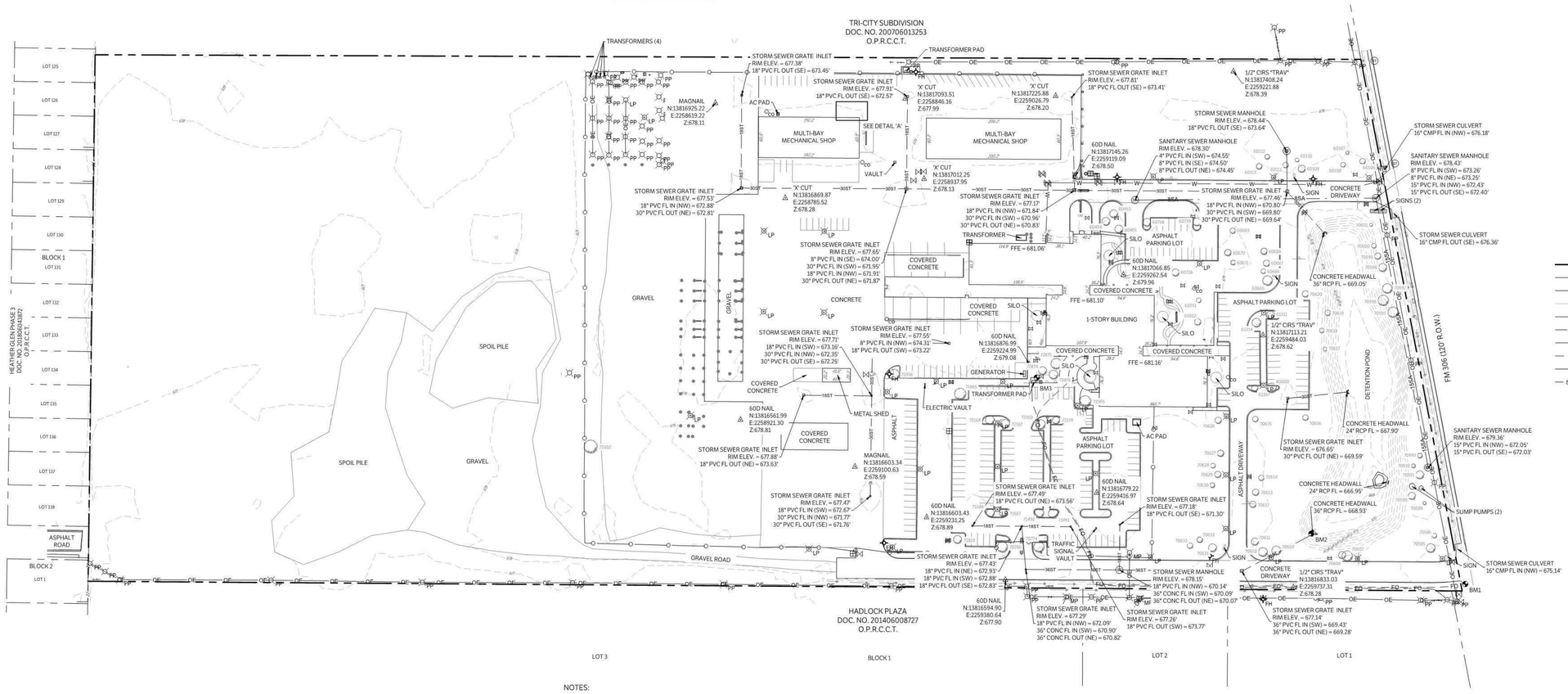


NOT TO SCALE



VICINITY MAP

NOT TO SCALE



LEGEND

- TEMPORARY BENCHMARK
- CONTROL POINT
- GUY ANCHOR
- POWER POLE
- LIGHT POLE
- ELECTRIC METER
- METER POLE
- FIRE HYDRANT
- IRRIGATION CONTROL VALVE
- WATER VALVE
- WATER METER
- STORM SEWER MANHOLE
- SANITARY SEWER MANHOLE
- CLEANOUT
- BOLLARD
- TRAFFIC SIGN
- SUBJECT TRACT APPROXIMATE BOUNDARY LINE
- ADJACENT PROPERTY LOT LINE
- CHAIN LINK FENCE LINE
- IRON FENCE LINE
- WOOD FENCE LINE
- WATER LINE
- OVERHEAD ELECTRIC LINE
- FIBER OPTIC LINE
- STORM SEWER LINE
- SANITARY SEWER LINE
- O.P.R.C.C.T. — OFFICIAL PUBLIC RECORDS OF COMAL COUNTY, TEXAS
- FFE — FINISHED FLOOR ELEVATION

NOTES:

1. THE INFORMATION CONTAINED HEREIN IS FOR USE AS A TOPOGRAPHIC SURVEY AND SHOULD NOT BE USED AS A BOUNDARY SURVEY FOR ANY REASON.
2. SUBJECT PROPERTY IS OWNED BY NEW BRAUNFELS UTILITIES. THIS SURVEY WAS PERFORMED AT THE OWNERS REQUEST TO OBTAIN SURFACE INFORMATION OF 336 FM 306.
3. THIS IS NOT A TITLE SURVEY AND SHOULD NOT BE RELIED UPON AS SUCH. MATTERS RELATED TO INSURING TITLE WERE NOT CONSIDERED IN THE PERFORMANCE OF THE SURVEY.
4. BASIS OF BEARINGS: ARE GROUND REPRESENTATIONS AND REFER TO THE TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE (4204), NAD83 DATUM, AS OBTAINED BY GPS OBSERVATIONS AND REFERENCED TO THE LEICA SMARTNET NETWORK OF NORTH AMERICA. COORDINATES CAN BE CONVERTED TO GRID USING THE FOLLOWING COMBINED SCALE FACTOR: (0.999858845)
5. ELEVATIONS CORRESPOND TO NAVD 88 COORDINATES AND ARE DERIVED FROM GPS OBSERVATION.
6. THIS PROPERTY FALLS WITHIN ZONE X AND HAS LESS THAN A 1% ANNUAL CHANCE OF FLOOD HAZARD ACCORDING TO THE FEMA FIRM MAP FOR COMAL COUNTY, CITY OF NEW BRAUNFELS, TEXAS, COMMUNITY MAP NO. 485493, PANEL NO. 0455F, MAP NO. 48091C0455F, REVISED EFFECTIVE DATE OF SEPTEMBER 2, 2009.
7. UTILITY MARKINGS SHOWN ON THIS SURVEY WERE MARKED ON THE GROUND IN RESPONSE TO TEXAS 811 TICKET REQUEST #2063954563. LOCATIONS OF UNDERGROUND UTILITIES MAY VARY FROM LOCATIONS SHOWN HEREON AND ADDITIONAL BURIED UTILITIES MAY BE ENCOUNTERED. NO EXCAVATIONS WERE MADE DURING THE PROGRESS OF THIS SURVEY TO LOCATE BURIED UTILITIES.

CERTIFICATE OF SURVEYOR

I, DANIEL B. DAVIS, A REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF TEXAS, DO HEREBY CERTIFY THIS PLAT TO BE A TRUE AND CORRECT REPRESENTATION OF LAND AS SURVEYED ON THE GROUND UNDER MY SUPERVISION DIRECTION AND SUBSTANTIALLY COMPLIES WITH THE CURRENT TEXAS SOCIETY OF PROFESSIONAL LAND SURVEYOR'S STANDARDS AND SPECIFICATIONS FOR A CATEGORY 6, CONDITION I SURVEY.

STATE OF TEXAS
REGISTERED
DANIEL B. DAVIS
6195
PROFESSIONAL
LAND SURVEYOR

DANIEL B. DAVIS R.P.L.S. NO. 6195

JULY 10, 2020
DATE

TOPOGRAPHIC SURVEY
NEW BRAUNFELS UTILITIES

BEING ALL OF THE CALLED 35.452 ACRE TRACT OUT OF THE HENRY FOSTER SURVEY NO. 34, A-154 RECORDED IN DOC. NO. 200106037693 O.P.R.C.C.T.

NEW BRAUNFELS UTILITIES
336 FM 306
HENRY FOSTER SURVEY NO. 34, A-154
NEW BRAUNFELS, COMAL COUNTY, TEXAS

FOR INFORMATION ONLY

NOTE: INFORMATION ABOUT THE SITE WAS TAKEN FROM PLANS PREPARED BY GESSNER ENGINEERING, LLC. THIS SURVEY IS FOR INFORMATION ONLY. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL EXISTING INFORMATION AND CONDITIONS PRIOR TO CONSTRUCTION AND NOTIFYING ARCHITECT OF ANY DISCREPANCIES OR CONFLICTS PRIOR TO CONSTRUCTION. CONTRACTOR SHALL COORDINATE EXACT LOCATION OF EXISTING AND NEW UTILITIES.

GESSNER ENGINEERING

CIVIL | CMT | GEOTECHNICAL
STRUCTURAL | LAND SURVEYING

CORPORATE OFFICE
2501 ASHFORD DRIVE
COLLEGE STATION, TEXAS 77840
www.gessnerengineering.com

BRENHAM	979.836.6855
COLLEGE STATION	979.680.8840
FORT WORTH	817.405.0774
GEORGETOWN	512.930.5832
SAN ANTONIO	210.305.4792

TBPELS FIRM REGISTRATION NUMBERS:
F-7451 & F-101914599

TOPOGRAPHIC SURVEY

ISSUE DATE:	07-01-2020
DRAWN BY:	JK
CHECKED BY:	DD
PROJECT #:	20-0404

REVISION DATE: 07-10-2020

BROWN REYNOLDS WATFORD ARCHITECTS
175 CENTURY SQUARE DRIVE
SUITE 330
COLLEGE STATION, TEXAS 77840
979.694.1779
WWW.BRWARCH.COM

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BROWN REYNOLDS WATFORD ARCHITECTS, INC.

DATE	11/01/2022
DRAWN BY	--
CHECKED BY	RH
BRW PROJECT NUMBER	219065.00

NEW BRAUNFELS FIRE TRAINING SITE INFRASTRUCTURE
353 FM 306
NEW BRAUNFELS, TX 77130

NO.	REVISION	DATE

AS0.0

BOUNDARY AND TOPOGRAPHIC SURVEY

CIVIL ENGINEERING PLANS FOR

NEW BRAUNFELS FIRE TRAINING SITE INFRASTRUCTURE

A-154 SUR-34 H FOSTER, ACRES 35.452, LAND ONLY
TYPE 3 (NON-RESIDENTIAL DEVELOPMENT)
GESSNER ENGINEERING PROJECT NO. 20-0404
NEW BRAUNFELS, TX

OWNER: NEW BRAUNFELS UTILITIES

ADDRESS: 353 FM 306 (Training Facility)

NEW BRAUNFELS, TX 78130

CONTACT INFORMATION:

ADAM MICHIE
CAPITAL PROJECTS MANAGER
550 LANDA STREET
NEW BRAUNFELS, TX 78130
(830) 221-4079
AMICHIE@NBTEXAS.ORG



LOCATION MAP
NTS

N

Sheet List Table	
Sheet Number	Sheet Title
--	COVER PAGE
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C0.1	NOTES
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C1.1	FIRE COVERAGE PLAN
C2.0	EROSION CONTROL PLAN
C3.0	DEMOLITION PLAN
C3.1	DETENTION POND FORCE MAIN DEMOLITION PLAN
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PREPARED BY:

GESSNER ENGINEERING

PLAN | DESIGN | VERIFY

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SAN ANTONIO 210.556.4124
GEORGETOWN 512.930.5832

NOTE:
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.

STATE OF TEXAS
JEREMY N. PETERS
100217
LICENSED PROFESSIONAL ENGINEER
11/11/22

100% CD

20-0404 NEW BRAUNFELS TRAINING FACILITY

CITY OF NEW BRAUNFELS STANDARD CONSTRUCTION NOTES:

1. IF CONSTRUCTION HAS NOT COMMENCED WITHIN ONE-YEAR OF CITY APPROVAL FOR CONSTRUCTION INSPECTION, THAT APPROVAL IS NO LONGER VALID.
2. 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.
3. 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.
4. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL CONTACT THE CITY OF NEW BRAUNFELS TO SCHEDULE A PRECONSTRUCTION MEETING.
5. FOR PUBLIC INFRASTUCTURE PERMIT OR GRADING PERMIT PROJECTS:
   - FOR INSPECTIONS, YOU MUST CALL BEFORE 12:00 P.M., 48 HOURS PRIOR TO YOUR INSPECTION REQUEST.
   - 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.
6. 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.
7. 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.
8. 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.

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:
1. 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 AND EVERY OTHER SERVICE LINE. 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 FILL MATERIAL HAS BEEN COMPLETED IN ACCORDANCE WITH THE PLANS. ADDITIONAL DENSITY TESTS MAY BE REQUESTED BY THE CITY OF NEW BRAUNFELS INSPECTOR.
2. 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:
1. 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:
1. SAWCUT EXISTING STREET AND MATCH TO NEW CONSTRUCTION.
2. SAWCUT EXISTING CURB TO TIE INTO EXISTING CONSTRUCTION.

CONSTRUCTION STABILIZED ENTRANCE:
1. SAWCUT CURB FOR CONSTRUCTION ENTRANCE.
2. 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. RIGHT- OF-WAY MUST BE CLEARED FROM MUD, ROCKS, ETC. AT ALL TIMES.

SIGNING AND PAVEMENT MARKING PLAN NOTES:
1. 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:
1. 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.
2. 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.
3. AREAS REQUIRING PERMANENT VEGETATION (EARTHEN CHANNELS, PONDS, ETC.) ARE REQUIRED TO MEET TXDOT SPECIFICATIONS FOR ITEM 160 TOPSOIL. TESTING PER TEX-128-E WILL BE REQUIRED AT THE CITY'S REQUEST.
4. 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.
5. 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.

GENERAL NOTES:

1. PRIOR TO CONSTRUCTION, THE CONTRACTOR MUST PROVIDE SUBMITTALS OF PROPOSED CONSTRUCTION MATERIALS FOR REVIEW BY THE DESIGN ENGINEER A MINIMUM OF 14 DAYS PRIOR TO REQUIRED USE.
2. ALL BOUNDARY, TOPOGRAPHIC INFORMATION, AND SURVEY CONTROL WAS COMPLETED IN JULY 2018 BY GESSNER ENGINEERING. CHANGES IN SITE OR FIELD CONDITIONS MAY HAVE OCCURRED.
3. THE CONTRACTOR SHALL PROTECT ALL SURVEY MONUMENTATION, BENCHMARKS, AND MARKERS DURING CONSTRUCTION.
4. THE CONTRACTOR MUST PROVIDE CONSTRUCTION STAKING SERVICES BASED ON THE INFORMATION PROVIDED IN THE PLANS.
5. CUT SHEETS CERTIFIED BY A LICENSED SURVEYOR SHALL BE PROVIDED AS THEY BECOME AVAILABLE PRIOR TO CONSTRUCTION OF THE WORK COVERED BY THE CUT SHEETS.
6. ALL UTILITIES AND SERVICE LINES SHOWN ARE TAKEN FROM RECORD INFORMATION SUPPLIED BY THE UTILITY OWNER OR HORIZONTALLY LOCATED BY INDEPENDENT LOCATORS. CONTRACTOR IS RESPONSIBLE TO REPORT ANY CONFLICTS BETWEEN PLAN AND ACTUAL CONDITIONS PRIOR TO CONSTRUCTION. OWNER, SURVEYOR, AND ENGINEER SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF INFORMATION OR DATA RELIED ON TO DEPICT UNDERGROUND FACILITIES. CONTRACTOR IS TO VERIFY THE EXACT LOCATION AND VERTICAL POSITIONING OF ALL PIPELINES, COMMUNICATION LINES, EXISTING UTILITIES, AND SERVICE LINES WITHIN THE PROJECT AREA, WHETHER SHOWN ON THE PLANS OR NOT, AT LEAST 48 HOURS PRIOR TO CONSTRUCTION. CONTRACTOR IS TO CONTACT OWNERS OF ALL UTILITIES AND SERVICE LINES WITHIN THE PROJECT AREA AND NOTIFY OF INTENT AT LEAST 1 WEEK PRIOR TO CONSTRUCTION.
7. CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH FACILITY OWNERS. CONTRACTOR IS TO MAINTAIN STRUCTURAL INTEGRITY OF ALL PIPELINES, ELECTRIC TRANSMISSION POLES AND LINES, PERMANENT AND TEMPORARY UTILITIES. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE DONE TO EXISTING UTILITY FACILITIES, PAVEMENT, ETC. AS A RESULT OF CONSTRUCTION ACTIVITIES.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING UTILITIES OR SERVICE LINES DURING THE CONSTRUCTION PROCESS. WHERE EXISTING UTILITIES OR SERVICE LINES ARE DAMAGED, THE CONTRACTOR SHALL REPAIR OR REPLACE THE UTILITY OR SERVICE LINE WITH THE SAME TYPE OF MATERIAL AND CONSTRUCTION, OR BETTER. ALL MATERIAL AND LABOR SHALL BE AT THE CONTRACTOR'S EXPENSE.
9. CONTRACTOR SHALL NOTIFY TEXAS811 AT LEAST 72 HOURS PRIOR TO COMMENCING CONSTRUCTION ACTIVITY AT 811 OR HTTP://WWW.TEXAS811.ORG. THE CONTRACTOR SHALL ALSO NOTIFY APPLICABLE UTILITY COMPANIES THAT HAVE UTILITY LINES ON OR IN THE GENERAL VICINITY OF THIS PROJECT SITE AT LEAST 72 HOURS PRIOR TO BEGINNING CONSTRUCTION. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL STANDARDS, SPECIFICATIONS, AND REGULATIONS. WHERE CONSTRUCTION DOCUMENTS CONFLICT WITH THOSE GUIDELINES, THE MORE STRINGENT REQUIREMENTS SHALL GOVERN.
10. CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN THESE PLANS AND ONSITE FIELD CONDITIONS OR SPECIFICATIONS OF OTHER DISCIPLINES. CONTRACTOR IS RESPONSIBLE TO REPORT ANY CONFLICTS WITHIN PLANS OR SPECIFICATIONS AND AWAIT WRITTEN INSTRUCTION FROM ENGINEER OR ARCHITECT PRIOR TO STARTING CONSTRUCTION.
11. THE CONTRACTOR IS REQUIRED TO OBTAIN ALL NECESSARY PERMITS, AS WELL AS INSPECTION APPROVALS.
12. A COPY OF APPROVED CONSTRUCTION PLANS SHALL BE KEPT ON SITE AT ALL TIMES THROUGHOUT CONSTRUCTION. THE CONTRACTOR SHALL MAINTAIN A SET OF REDLINE DRAWINGS TO RECORD AS-BUILT CONDITIONS.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTAINMENT AND PROPER DISPOSAL OF ALL LIQUID AND SOLID WASTE ASSOCIATED WITH THIS PROJECT. THE CONTRACTOR SHALL USE ALL MEANS NECESSARY TO PREVENT THE OCCURRENCE OF WIND BLOWN LITTER FROM THE PROJECT SITE. THE SITE IS REQUIRED TO PROVIDE CONTAINMENT FOR WASTE PRIOR TO AND DURING DEMOLITION. SOLID WASTE ROLL OFF BOXES AND/OR METAL DUMPSTER SHALL BE SUPPLIED BY THE CONTRACTOR.
14. DURING CONSTRUCTION, THE CONTRACTOR SHALL MAINTAIN AN ORDERLY PROJECT SITE. THE CONTRACTOR SHALL CLEAN, REMOVE, AND PROPERLY DISPOSE OF ANY SURPLUS OR DISCARDED MATERIALS, TEMPORARY STRUCTURES, AND DEBRIS FROM THE PROJECT SITE.
15. THE CONTRACTOR IS RESPONSIBLE FOR STORAGE AND SAFE-GUARDING OF ALL MATERIALS AND EQUIPMENT AT THE PROJECT SITE TO MAINTAIN A SAFE AND SECURE PROJECT.
16. THE CONTRACTOR SHALL COORDINATE SITE STORAGE WITH THE OWNER. (SEPARATELY AND IN WRITING IF UTILIZING OFF-SITE PROPERTY.)
17. CONTRACTOR IS TO CONFINE ALL WORK TO OWNER'S PROPERTY. NO CONSTRUCTION ACTIVITY IS ALLOWED ON OR THROUGH PRIVATE PROPERTY UNLESS COVERED BY A PUBLIC UTILITY EASEMENT OR OTHER DOCUMENTED AGREEMENT. ANY ADJACENT RIGHT-OF-WAY (R.O.W.) OR PROPERTY AFFECTED DURING CONSTRUCTION SHALL BE RETURNED TO PRE-CONSTRUCTION CONDITION AT THE CONTRACTOR'S EXPENSE.
18. ALL ITEMS SHOWN ON THESE PLANS ARE ASSUMED NEW/PROPOSED UNLESS DESIGNATED AS EXISTING AND SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR INCLUSIVE OF ANY MATERIALS, LABOR, EQUIPMENT, AND OTHER REQUIREMENTS FOR A COMPLETE AND FUNCTIONING SITE ELEMENT. ALL ITEMS NECESSARY FOR PROPER COMPLETION OF THE WORK NOT SPECIFICALLY CALLED FOR OR SPECIFIED ON THE PLANS ARE THE RESPONSIBILITY OF THE CONTRACTOR AND CONSIDERED SUBSIDIARY TO THE WORK.
19. ALL EXISTING UTILITY APPURTENANCES (VALVE BOXES, FIRE HYDRANTS, MANHOLE RING AND COVER, JUNCTION BOX RING AND COVER, ETC) SHALL BE ADJUSTED TO FINAL GRADES.
20. ALL CONSTRUCTION OPERATIONS FOR THIS PROJECT SHALL BE ACCOMPLISHED IN ACCORDANCE WITH APPLICABLE REGULATIONS OF THE UNITED STATES OCCUPATIONAL AND HEALTH ADMINISTRATION (OSHA).
21. THESE PLANS, PREPARED BY GESSNER ENGINEERING, DO NOT EXTEND TO OR INCLUDE DESIGNS OR SYSTEMS PERTAINING TO THE SAFETY OF THE CONTRACTOR OR HIS EMPLOYEES, AGENTS OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE SEAL HEREON DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEMS THAT MAY NOW OR HEREAFTER BE INCORPORATED IN THE WORK.
22. CONTRACTOR SHALL BE RESPONSIBLE AND LIABLE FOR ALL JOB SITE SAFETY, FOR MANAGEMENT OF JOB SITE PERSONNEL, FOR SUPERVISION OF THE USE OF JOB SITE EQUIPMENT AND FOR DIRECTION OF ALL CONSTRUCTION PROCEDURES, METHODS, AND ELEMENTS REQUIRED TO COMPLETE THE CONSTRUCTION OF THE PROPOSED IMPROVEMENTS.
23. THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL STATE AND FEDERAL REGULATIONS REGARDING CONSTRUCTION ACTIVITIES NEAR ENERGIZED OVERHEAD ELECTRIC LINES.

DEMOLITION NOTES:

1. AREAS BENEATH REMOVED PAVEMENT SHALL BE CLEARED OF ALL LOOSE OR DISTURBED MATERIAL OR WATER. THE AREA SHALL BE MANUALLY COMPACTED, OR PROOF-ROLLED AND REPLACED WITH SIMILAR MATERIALS PRIOR TO NEW CONCRETE PAVEMENT PLACEMENT PER SPECIFICATIONS.
2. ALL ITEMS TO BE REMOVED DURING CLEARING AND GRUBBING - REMOVE NOT ONLY THE ABOVE GROUND ELEMENTS, BUT ALL UNDERGROUND ELEMENTS AS WELL. WHERE TREES AND BRUSH ARE TO BE REMOVED, REMOVE THE TOTAL EXTENT OF THEIR ROOT SYSTEMS. UNLESS OTHERWISE DIRECTED BY THE OWNER, ALL MATERIALS AND DEBRIS DEMOLISHED AND/OR REMOVED SHALL BECOME PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN A MANNER SATISFACTORY TO THE OWNER, ARCHITECT, & ENGINEER. ON-SITE BURNING WILL NOT BE PERMITTED.
3. ALL EXCESS TOPSOIL AND CUT MATERIAL IS TO BE HAULED OFF AND DISPOSED OF OFF-SITE.
4. CONTRACTOR SHALL PREVENT TRANSPORT OF SEDIMENT TO ADJACENT PROPERTIES AND PUBLIC OR PRIVATE RIGHT OF WAYS AND IS RESPONSIBLE FOR CLEANUP IF SUCH OCCURS. CONTRACTOR IS TO ENSURE NO CONSTRUCTION DEBRIS OR MUD IS TRACKED OR CARRIED ON TO PRIVATE STREETS OR LANDS OR TO PUBLIC OR PRIVATE STREETS. CONTRACTOR IS RESPONSIBLE FOR CLEANUP AFTER EACH DAYS WORK. CONTRACTOR IS TO MAKE USE OF BEST MANAGEMENT PRACTICES TO PREVENT SEDIMENT FROM LEAVING THE SITE OR ENTERING EXISTING STORM SEWER OR DOWNSTREAM CHANNEL AREA. CONTRACTOR SHALL MAINTAIN EROSION CONTROL THROUGHOUT CONSTRUCTION PERIOD AND UNTIL GRASS IS ESTABLISHED.
5. CONTRACTOR TO PROTECT ALL EXISTING TREES TO REMAIN DURING DEMOLITION AND CONSTRUCTION ACTIVITIES.
6. MILLING, MIXING, AND CRUSHING OF EXISTING PAVEMENT AND/OR BASE MATERIAL SHALL BE DONE SO THAT A UNIFORM AND HOMOGENEOUS MIXTURE AND GRADATION IS ACHIEVED FOR CEMENT STABILIZATION.
7. CONTRACTOR IS TO PROTECT ALL EXISTING TREES INDICATED TO REMAIN DURING DEMOLITION AND CONSTRUCTION ACTIVITIES UNLESS OTHERWISE NOTED IN THE PLANS. ALL EXISTING TREES LOCATED BETWEEN THE FENCE LINES ARE ALLOWED TO BE REMOVED AS LONG AS REMOVAL DOES NOT DAMAGE THE FENCE LINE OR OTHER PROPERTY.
8. CULVERTS SHALL BE PROTECTED AND RE-USED OR REPLACED AS SPECIFIED IN THE PLANS.

DIMENSION CONTROL NOTES:

1. THE CONTRACTOR MAY OBTAIN AN ELECTRONIC COPY OF PROJECT PLANS FOR CONSTRUCTION PURPOSES, WITH THE PERMISSION OF THE OWNER. THE ELECTRONIC FILE AND INFORMATION GENERATED, BY GESSNER ENGINEERING, FOR THIS PROJECT IS CONSIDERED BY GESSNER ENGINEERING, TO BE CONFIDENTIAL. WHEN ASSIGNED, ITS USE IS INTENDED SOLELY FOR THE INDIVIDUAL OR ENTITY TO WHICH IT IS ADDRESSED. THE MATERIAL IS INTENDED FOR USE BY THE RECIPIENT NAMED, ONLY, AND PERMISSION IS NOT GRANTED TO THE RECIPIENT FOR DISTRIBUTION OF THIS DOCUMENTS IN ANY FORM OR FASHION. THE RECIPIENT UNDERSTANDS THAT THIS DATA IS AUTHORIZED "AS IS" WITHOUT ANY WARRANTY AS TO ITS PERFORMANCE, ACCURACY, FREEDOM FROM ERROR, OR AS TO ANY RESULTS GENERATED THROUGHOUT ITS USE. THE RECIPIENT ALSO UNDERSTANDS AND AGREES THAT GESSNER ENGINEERING, UPON RELEASE OF SUCH DATA, IS NOT LONGER RESPONSIBLE FOR THEIR USE OR MODIFICATION. THE USER AND RECIPIENT OF THE ELECTRONIC DATA ACCEPTS FULL RESPONSIBILITY AND LIABILITY FOR ANY CONSEQUENCES ARISING OUT OF THEIR USE.
2. ALL DIMENSIONS SHOWN ARE TO BE USED IN CONJUNCTION WITH THE PLANS FOR LOCATING ALL IMPROVEMENTS AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR FOR WORKABILITY PRIOR TO CONSTRUCTION OF THE IMPROVEMENTS.
3. UNLESS NOTED OTHERWISE, ALL DIMENSIONS ARE TO BACK OF CURB. REFER TO ARCHITECTURAL PLANS FOR DETAILED BUILDING DIMENSIONS.

GRADING NOTES:

1. ALL UNPAVED AREAS SHALL BE ADEQUATELY GRADED TO DRAIN AT A MINIMUM OF 2.0% SLOPE, UNLESS OTHERWISE NOTED, SO THAT NO PONDING OCCURS.
2. WHEN TOP OF CURB ELEVATIONS ARE SHOWN, THE CURB IS A STANDARD 6" CURB, UNLESS OTHERWISE NOTED.
3. ALL SPOTS ARE TOP OF CURB ELEVATIONS, UNLESS OTHERWISE NOTED.
4. CONTRACTOR SHALL FOLLOW THE GENERAL INTENT OF THE GRADING PLANS. MINOR ADJUSTMENTS TO THE ACTUAL ELEVATIONS SHOWN ON THE GRADING PLAN MAY BE REQUIRED TO MATCH EXISTING GROUND ELEVATIONS AND STRUCTURES. CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO ANY MODIFICATIONS.
5. ADEQUATE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION AND ANY DRAINAGE DITCH OR STRUCTURE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO EXISTING CONDITIONS OR BETTER.
6. THE APPROVAL OF THE PLANS IS NOT AN AUTHORIZATION TO GRADE ADJACENT PROPERTIES. WHEN FIELD CONDITIONS WARRANT OFF-SITE GRADING, PERMISSION MUST BE OBTAINED FROM AFFECTED PROPERTY OWNER(S). ANY ADJACENT PROPERTY OR RIGHT-OF-WAY DISTURBED DURING CONSTRUCTION SHALL BE RETURNED TO EXISTING CONDITIONS OR BETTER.
7. TREATMENT SHALL BE ACCOMPLISHED SUCH THAT A UNIFORM SUBGRADE MIX IS OBTAINED. PRIOR TO THE APPLICATION OF LIME TO THE SUBGRADE, THE OPTIMUM PERCENTAGE TO BE ADDED SHOULD BE DETERMINED BASED ON TEX-121-E LABORATORY TESTS (LIME) AND TEX-120-E LABORATORY TESTS (CEMENT) CONDUCTED ON MIXTURES OF THE SUBGRADE SOILS WITH VARYING PERCENTAGES. SUBGRADE SOIL SAMPLES SHOULD BE OBTAINED FROM THE PAVEMENT AREA AT THE PROPOSED FINAL SUBGRADE ELEVATION. THE LIME SHOULD INITIALLY BE BLENDED WITH A MIXING DEVICE SUCH AS PULVERMIXER AND SUFFICIENT WATER ADDED.
8. PRIOR TO REVEGETATION OPERATIONS. CONTRACTOR TO SPREAD/REPLACE AND CONSOLIDATE TOPSOIL TO A DEPTH OF 6".
9. ALL DISRUPTED AREAS ARE TO HAVE ESTABLISHMENT OF GRASS AS OUTLINED BELOW OR IS WITHIN/ADJACENT TO LANDSCAPE AREAS-PER THE LANDSCAPE PLAN. CONTRACTOR IS RESPONSIBLE FOR WATERING, MAINTENANCE, AND ESTABLISHMENT OF VEGETATION FOR A PERIOD OF 90 DAYS. CONTRACTOR TO GUARANTEE ALL PLANTED MATERIAL GROWTH AND COVERAGE FOR A PERIOD OF ONE YEAR. GROWTH AND COVERAGE SHALL BE DEFINED AS 95% OF THE PLANTED AREA WITH UNIFORM COVERAGE OF GRASS GREATER THAN 1" IN HEIGHT WITH NO BARE SPOTS GREATER THAN 2 SQUARE FEET. SECOND APPLICATION OF HYDROMULCH OR SOD IS REQUIRED FOR BARE SPOTS NOT MEETING COVERAGE REQUIREMENT WITHIN DAYS OF INITIAL APPLICATION.
10. ALL DISTURBED AREAS NOT TO BE PAVED OR LANDSCAPED ARE TO BE PREPARED AND HYDROMULCH SEEDED FOR PERMANENT ESTABLISHMENT OF VEGETATION. PRIOR

NEW BRAUNFELS UTILITIES NOTES:

1. 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 POLICIES WATER SYSTEMS"
2. 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 AT 830-608-8971 WITH AT LEAST THREE (3) WORKING DAYS (72 HOURS) NOTICE. WORK COMPLETED BY THE CONTRACTOR, WHICH HAS NOT RECEIVED A NOTICE TO PROCEED WITH NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING WILL BE SUBJECT TO REMOVAL AND REPLACEMENT BY AND AT THE EXPENSE OF THE CONTRACTOR.
3. THE DEVELOPER DEDICATES THE WATER / WASTEWATER MAINS UPON COMPLETION BY THE DEVELOPER AND ACCEPTANCE BY THE NEW BRAUNFELS UTILITIES WATER SYSTEM. NBU WILL OWN AND MAINTAIN SAID WATER / WASTEWATER MAINS WHICH ARE LOCATED WITHIN SAID PARTICULAR SUBDIVISION. (AS APPLICABLE).
4. 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 ANY 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.
5. 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.
6. 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 UTILITIES (NOT ADJUSTED ON PLANS). COST OF RESTORATIONS, IF ANY, SHALL BE THE CONTRACTOR'S ENTIRE EXPENSE.
7. 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 CAUTION.
8. 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 THE WORK.
9. 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.
10. 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 PERMIT.
11. 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 31 TAC 313.4 AND 31 TAC 313.9.
12. 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.
13. CONTRACTOR IS REQUIRED TO VERIFY PROJECT ELEVATIONS. THE TERM "MATCH EXISTING" SHALL BE UNDERSTOOD TO SIGNIFY BOTH HORIZONTAL AND VERTICAL ALIGNMENT.
14. 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 CONSTRUCTION OPERATIONS.
15. OSHA REGULATIONS PROHIBIT OPERATIONS THAT WILL BRING PERSONS OR EQUIPMENT WITHIN 10 FEET OF AN ENERGIZED LINE. WHERE WORKMEN AND/OR EQUIPMENT HAVE TO WORK CLOSE TO AN ENERGIZED ELECTRICAL LINE, THE CONTRACTOR SHALL NOTIFY THE ELECTRICAL POWER COMPANY INVOLVED AND MAKE WHATEVER ADJUSTMENTS NECESSARY TO ENSURE THE SAFETY OF THOSE WORKMEN.
16. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE UTILITY SERVICE LINES AS REQUIRED FOR CONSTRUCTION. UTILITY COMPANIES ARE ALSO PREVIOUSLY MENTIONED IN "UTILITY COMPANY NOTIFICATION".
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 LISTED ITEMS:
    - 19.A. WATER MAINS AND SERVICES
    - 19.B. SEWER MAINS AND SERVICES
20. NO METER BOXES TO BE SET IN DRIVEWAYS. ANY METER BOXES SET IN DRIVEWAYS WILL BE RELOCATED AT CONTRACTOR'S AND/OR DEVELOPER'S EXPENSE.
21. WHERE THE MINIMUM 9 FOOT SEPARATION DISTANCE BETWEEN SEWER LINES AND WATER LINES / MAINS CANNOT BE MAINTAINED, THE INSTALLATION OF SEWER LINES SHALL BE IN STRICT ACCORDANCE WITH TCEQ.
22. 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.
23. UTILITY TRENCH COMPACTION WITH STREET R.O.W.
    - 23.A. ALL UTILITY TRENCH COMPACTION TEST WITHIN THE STREET PAVEMENT SECTION SHALL BE THE RESPONSIBILITY OF THE DEVELOPER'S GEO-TECHNICAL ENGINEER.
    - 23.B. FILL MATERIAL SHALL BE PLACED IN UNIFORM LAYERS NOT TO EXCEED TWELVE INCHES (12") LOOSE.
    - 23.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.
    - 23.D. THE NUMBER AND LOCATION OF REQUIRED TESTS SHALL BE DETERMINED BY THE GEO-TECHNICAL ENGINEER AND APPROVED BY THE CITY OF NEW BRAUNFELS STREET INSPECTOR.
    - 23.E. UPON COMPLETION OF TESTING THE GEO-TECHNICAL 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.

TXDOT CONSTRUCTION GENERAL NOTES

1. "THE DESIGN AND CONSTRUCTION WILL PROVIDE FOR PRESERVING ALL EXISTING FEATURES IN OR NEAR THE STATE RIGHT OF WAY BEING AFFECTED BY THE WIDENING. THIS INCLUDES BUT IS NOT LIMITED TO, EXISTING DRIVEWAY GATE SET-BACKS, RELOCATION OF ELECTRONIC PRIVATE PROPERTY GATES, MAILBOX TURNOUTS, MAILBOXES AND SUPPORTS, CATTLE GUARDS, ROADWAY SIGNING, EXISTING RIP-RAP OR OTHER PERMANENT EROSION CONTROL FEATURES, DIVERSIONARY BERMS, SWALES, DITCHES, AMOUNT AND CONFIGURATION OF DRIVEWAY FLARES AND DRIVEWAY CENTERLINE PROFILE, METAL BEAM GUARD FENCE AND END TREATMENTS, ETC. EXISTING DRIVEWAY CULVERTS AND SAFETY END TREATMENTS IF EFFECTED BY ROADWAY WIDENING WILL BE RECONSTRUCTED TO PRESERVE EXISTING FRONT SLOPE RATES. THE COORDINATION OF ITEMS THAT EFFECT EXISTING PRIVATE PROPERTY ACCESS, MAIL DELIVERY, ETC. IS THE RESPONSIBILITY OF THE DEVELOPER. THE WRITTEN CONCURRENCE OF ANY EFFECTED PROPERTY OWNERS FOR CONSTRUCTION EFFECTING THEIR DRIVEWAYS OR MAILBOX TURNOUTS MUST BE OBTAINED AND PROVIDED TXDOT PRIOR TO TXDOT DRIVEWAY PERMITS BEING ISSUED."
2. "FOR WORK IN STATE RIGHT OF WAY, THE DEVELOPER IS RESPONSIBLE FOR COORDINATION OF, OBTAINING PERMITS FOR, AND COMPLYING WITH ANY AND ALL STATE AND FEDERAL REGULATORY AGENCIES AND ALL APPLICABLE LAWS, RULES AND REGULATIONS PERTAINING TO THE REGULATION OF DRAINAGE, PRESERVATION OF CULTURAL RESOURCES, NATURAL RESOURCES AND THE ENVIRONMENT. THE DEVELOPER IS RESPONSIBLE FOR DETERMINING IF THE PROJECT IS IN AN ENVIRONMENTALLY SENSITIVE AREA SUCH AS WITHIN THE RECHARGE OR CONTRIBUTING ZONE OF PROTECTED AQUIFERS, AND ACT IN ACCORDANCE WITH ALL RESOURCE AGENCY REGULATIONS."

IF TXDOT HAS A CZP OR WPAP ON FILE WITH TCEQ, THE DEVELOPER IS RESPONSIBLE FOR AMENDING TXDOT'S PERMIT, OBTAINING TCEQ APPROVAL AND PROVIDING TXDOT WITH THE APPROVED AMENDED PERMIT. THE AMENDED PERMIT WILL ADDRESS THE RELOCATION OF ANY TXDOT PERMANENT BMP'S INCLUDING VEGETATIVE FILTER STRIPS THAT MAY BE IMPACTED BY WORK DONE WITHIN TXDOT ROW. "

IF TXDOT DOES NOT HAVE A CZP OR WPAP ON FILE WITH TCEQ, ANY PERMANENT BMP'S INCLUDING VEGETATIVE FILTER STRIPS, THAT MAY BE REQUIRED IN ORDER TO TREAT ADDITIONAL IMPERVIOUS COVER PLACED IN TXDOT ROW WILL BE LOCATED IN PRIVATE PROPERTY AND THE DEVELOPER WILL PROVIDE TXDOT WITH EVIDENCE OF TCEQ APPROVAL OF THE ADDITIONAL IMPERVIOUS COVER."

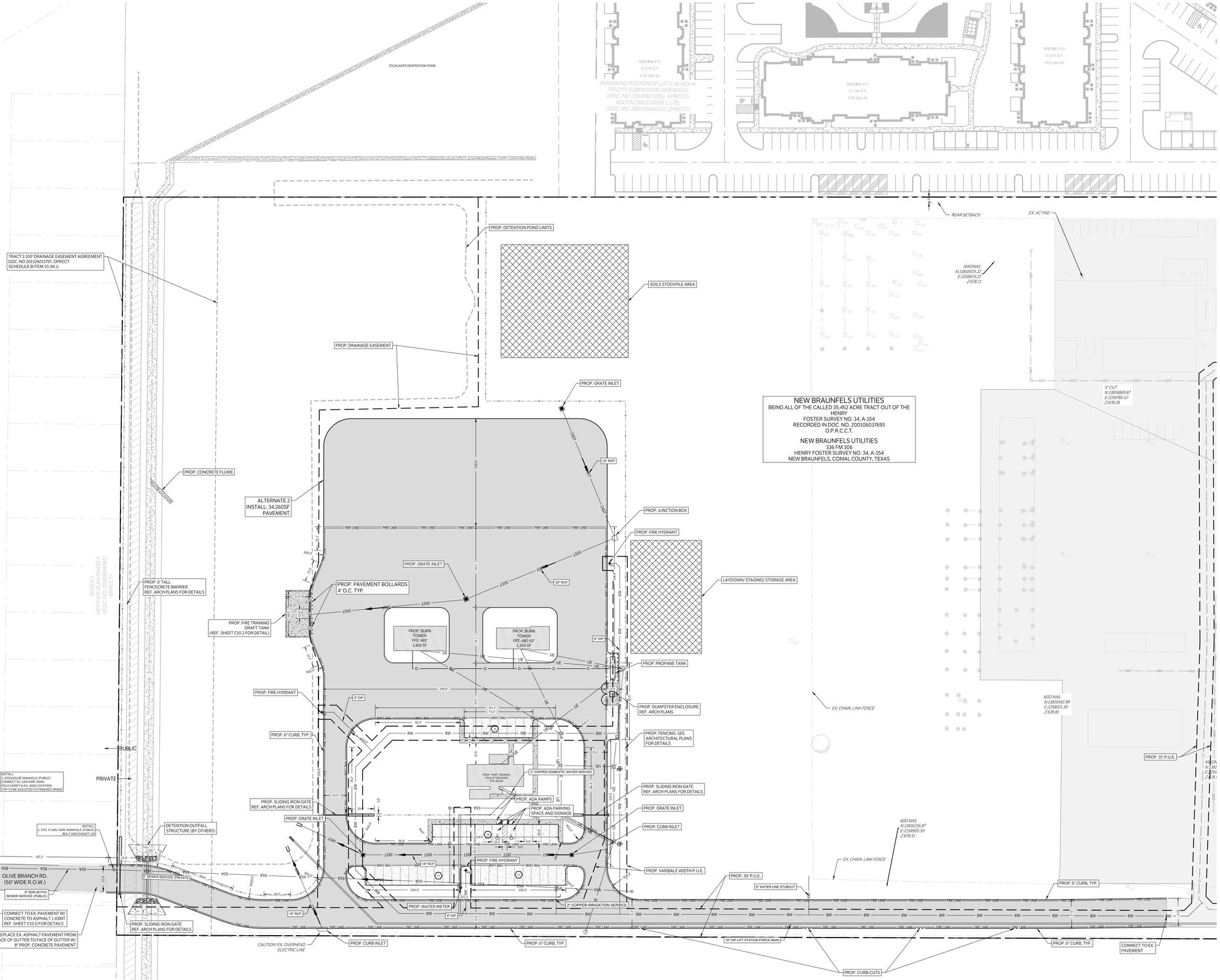
THE DEVELOPER MAY NOT OPERATE UNDER RESOURCE AGENCY ENVIRONMENTAL CLEARANCE OF A PREVIOUS OR ONGOING TXDOT PROJECT, BUT WILL BE REQUIRED TO OBTAIN SEPARATE RESOURCE/ENVIRONMENTAL AGENCY CLEARANCE."

3. "IF WASTE AREAS OR MATERIAL SOURCE AREAS RESULT FROM THIS PROJECT, THE CONTRACTOR IS REMINDED TO FOLLOW THE REQUIREMENTS OF THE TEXAS AGGREGATE QUARRY AND PIT SAFETY ACT. IN ADDITION, IT IS REQUESTED THAT THESE AREAS NOT BE VISIBLE FROM ANY HIGHWAY ON THE STATE SYSTEM."
    - 3.5. "ANY MATERIALS REMOVED AND NOT REUSED AND DETERMINED TO BE SALVAGEABLE SHALL BE STORED WITHIN THE PROJECT LIMITS AT AN APPROVED LOCATION OR DELIVERED UNDAMAGED TO THE STORAGE YARD AS DIRECTED. PROPERLY DISPOSE UNSALVAGEABLE MATERIALS IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS. DEFACE TRAFFIC SIGNS SO THAT THEY WILL NOT REAPPEAR IN PUBLIC AS SIGNS."
4. "ANY TREES EXISTING WITHIN STATE RIGHT OF WAY ARE THE NATURAL RESOURCES OF THE STATE AND WILL BE PROTECTED. IN THE EVENT THAT TREES MUST BE REMOVED, TXDOT WRITTEN PERMISSION WILL BE RECEIVED IN ADVANCE AND WILL IDENTIFY THE SPECIFIC TREES BY SPECIES, DIAMETER AND LOCATION TO BE REMOVED. THE DEVELOPER WILL BE FINED FOR ANY UNPERMITTED REMOVAL OF TREES."
    - 4.5. "IN THE EVENT THAT THERE ARE AREAS OF PUBLIC ROW DEDICATION RESULTING FROM THE PLATTING PROCESS, THE AREA WITHIN THE PUBLIC ROW DEDICATION DOES NOT PASS INTO TXDOT OWNERSHIP AS A RESULT OF PLATTING. HOWEVER, THE DEVELOPER WILL REMOVE ANY OLD FENCING, GATES AND UNSIGHTLY VEGETATION WITHIN THE AREA OF THE ROW DEDICATION, LEAVING IT IN AN AESTHETICALLY PLEASING CONDITION. THE AREA OF ROW DEDICATION WILL NOT BE MOWED OR OTHERWISE MAINTAINED BY TXDOT. PRIOR TO REMOVAL OF TREES IN THE AREA OF ROW DEDICATION, THE TREES WILL FIRST BE EVALUATED IN ACCORDANCE WITH THE REQUIREMENTS OF LOCAL TREE PROTECTION ORDINANCES AND THE WRITTEN CONCURRENCE OF THE LOCAL JURISDICTION WILL BE PROVIDED TO TXDOT."
5. "THE DEVELOPER WILL MAINTAIN AT THE PROJECT SITE, AND MAKE AVAILABLE UPON REQUEST, COPIES OF ALL APPROVED ENVIRONMENTAL PLANS AND PERMITS RELATING TO WORK IN STATE RIGHT OF WAY."
6. "PRIOR TO BEGINNING GRADING ACTIVITY THE CONTRACTOR WILL SET AND MAINTAIN ROADWAY STATIONING, CONTROL POINTS, MARKS, STAKES TO ESTABLISH LINES, SLOPES, GRADES AND CENTERLINES."
7. "ANY SLOPES IN STATE RIGHT OF WAY WHICH BECOME STEEPER THAN 3:1 AS A RESULT OF THE WORK WILL BE TREATED WITH 4" THICK REINFORCED CONCRETE RIPRAP AND BE TREATED WITH METAL BEAM GUARD FENCE. THIS MAY ENTAIL ADDITIONAL RIP-RAP BEYOND THAT SHOWN IN THE PLANS."
    - 7.5. "UNLESS OTHERWISE SHOWN ON THE PLANS, WHERE EXISTING CONCRETE RIP-RAP IS REMOVED, MODIFIED OR EXTENDED, THE PORTION TO BE REMOVED WILL BE NEATLY SAW-CUT PRIOR TO REMOVAL AND THE NEW RIP-RAP WILL BE FORMED TO MATCH THE EXISTING LINES AND GRADES OF THE EXISTING RIP-RAP AND WILL BE DOWELED INTO THE EXISTING RIP-RAP WITH #3 BARS ON 12" CENTERS. THE DOWEL BARS WILL BE EPOXIED IN PLACE WITH EPOXY MEETING TXDOT REQUIREMENTS. THE MINIMUM EMBEDMENT LENGTH IS 9 INCHES. THIS APPLIES TO ANY TYPE OF CONCRETE RIP-RAP INCLUDING METAL BEAM GUARD FENCE OR CABLE BARRIER MOW STRIPS. "
8. "DUANE HOFFERICHTER (830) 609-0707 NEW BRAUNFELS, TRAVIS YOUNG (830) 303-0130 SEGUIN, CHAD LUX (830) 816-2430 BOERNE, MARK ANDREWS (830) 393-3144 FLORESVILLE, TXDOT MAINTENANCE OFFICE WILL BE CONTACTED BY THE CONTRACTOR 48 HOURS PRIOR TO WORK OCCURRING IN STATE RIGHT OF WAY."
9. "STATE RIGHT OF WAY WILL NOT BE USED AS AN AREA FOR CONTRACTOR PARKING OR FOR STAGING THE RECEIPT OF MATERIALS OR EQUIPMENT."
10. "TRAFFIC CONTROL AND CONSTRUCTION BARRICADES WILL MEET THE REQUIREMENTS OF THE TEXAS MUTCD."
11. "THE CONTRACTOR WILL PROVIDE ADVANCE NOTIFICATION TO THE ENGINEER OF IMPENDING/UPCOMING LANE CLOSURES FOR ALL TEMPORARY AND/OR PERMANENT LANE, RAMP, CONNECTOR, FRONTAGE, SHOULDER, MEDIAN CROSSOVER, ETC. CLOSURES OR DETOURS."
12. "ACCESS TO ADJOINING PROPERTY MUST BE MAINTAINED AT ALL TIMES."
13. "UNLESS OTHERWISE NOTED IN THE PLANS AND/OR AS DIRECTED BY THE AREA ENGINEER OR MAINTENANCE SUPERVISOR, DAILY LANE CLOSURES SHALL BE LIMITED ACCORDING TO THE FOLLOWING RESTRICTIONS:

-NIGHTTIME: MAINTENANCE SUPERVISOR AND/OR AREA ENGINEER APPROVAL REQUIRED. (WITH UNIFORMED OFF DUTY LAW ENFORCEMENT OFFICERS).

-WEEKEND CLOSURES: MAINTENANCE SUPERVISOR AND/OR AREA ENGINEER APPROVAL REQUIRED."

14. "NO LANE CLOSURES OR ROADWAY CLOSURES WILL BE PERMITTED FOR THE FOLLOWING KEY DATES AND/OR SPECIAL EVENTS:
    BETWEEN DECEMBER 15 AND JANUARY 1.
    WEDNESDAY BEFORE THANKSGIVING THRU THE SUNDAY AFTER THANKSGIVING.
    SATURDAY AND SUNDAY BEFORE MEMORIAL DAY AND LABOR DAY.
    SATURDAY OR SUNDAY WHEN JULY 4 FALLS ON A FRIDAY OR MONDAY."
15. "AT NO TIME WILL THE ROADWAY TRAVEL WAY BE BLOCKED"
16. "LANE CLOSURES WILL ONLY BE PERMITTED WITH 48 HOUR PRIOR APPROVAL OF THE TXDOT MAINTENANCE SUPERVISOR. LANE CLOSURES WILL BE PERMITTED ONLY BETWEEN 9:00 A.M. AND 4:00 P.M. MONDAY THROUGH FRIDAY."
    - 16.5. "FOR LANE CLOSURES ON TWO-LANE TWO-WAY ROADWAYS, INCLUDING DURING PILOT CAR OPERATIONS, FLAGGERS WILL BE PLACED AT THE BEGINNING AND END OF THE WORK ZONE AS WELL AS AT EACH INDIVIDUAL DRIVEWAY AND SIDE ROAD INTERSECTION WITHIN THE LIMITS OF THE WORK ZONE AND EXTENDING FOR A MINIMUM OF THE BEGINNING OF ADVANCED WARNING SIGNS EITHER END OF THE WORK ZONE TO CONTROL, WARN AND DIRECT SIDE ROAD AND DRIVEWAY TRAFFIC OF THE CHANGE IN TRAFFIC OPERATIONS. WHENEVER ONE WAY TRAFFIC CONTROL IS ACCOMPLISHED BY TRAFFIC SIGNALS WORK ZONE FLAGGERS WILL BE SIMILARLY STATIONED AT EACH INDIVIDUAL DRIVEWAY AND SIDE ROAD INTERSECTION WITHIN THE LIMITS OF THE WORK ZONE AND EXTENDING FOR A MINIMUM OF THE BEGINNING OF THE ADVANCED WARNING SIGNS EITHER END OF THE WORK ZONE. ALL FLAGGERS WILL BE IN CONSTANT RADIO CONTACT."
17. "A MINIMUM 3:1 (H:V) TEMPORARY SAFETY SLOPE OF STABLE COMPACTED MATERIAL WILL BE REQUIRED ADJACENT TO THE STATE HIGHWAY EDGE OF PAVEMENT AT ALL TIMES DURING NON WORKING HOURS."
18. "ONLY ONE SIDE OF THE ROADWAY WILL BE OPEN TO CONSTRUCTION AT A TIME. WORK WILL BE COMPLETED AND PAVEMENT EDGES BACKFILLED ON ONE SIDE OF THE ROAD BEFORE WORK WILL BEGIN ON THE OPPOSITE SIDE OF THE ROADWAY."
19. "ALL MILLING, PAVING AND SEAL COAT OPERATIONS SHALL PROCEED IN THE DIRECTION OF TRAFFIC."
20. "ANY PAVEMENT EDGE DROP-OFFS BETWEEN 1 AND 2 INCHES IN HEIGHT WILL HAVE CW 8-11 WARNING SIGNS. ANY PAVEMENT EDGE DROP-OFF 2 INCHES OR GREATER WILL HAVE A 3:1 COMPACTED SAFETY SLOPE AND CW 8-9A OR CW 8-11 SIGNS PLUS CHANNELIZING DEVICES. PAVEMENT EDGES WILL BE SHOULDERED UP WITH COMPACTED EMBANKMENT MATERIAL AND 4 INCHES OF TOPSOIL AS SOON AS POSSIBLE AFTER PAVING IS COMPLETED ON THE SIDE OF THE ROAD BEING WIDENED."
21. "PROOF ROLLING OF SUBGRADE IS REQUIRED AND SHALL BE WITNESSED BY TXDOT PRIOR TO PLACEMENT OF PAVEMENT STRUCTURE UNLESS OTHERWISE APPROVED BY THE TXDOT MAINTENANCE SUPERVISOR. THE REQUIREMENT FOR PROOF-ROLLING OF SUBGRADE IS NOT SUPERSEDED BY ANY OTHER REQUIREMENTS INCLUDING THOSE OF ANY GEOTECHNICAL REPORT. "
22. "ALL FLEXIBLE BASE WILL HAVE A MINIMUM PLASTICITY INDEX OF 4."
23. "ALL COURSES OF ASPHALTIC CONCRETE PAVEMENT (REGARDLESS OF TYPE) WILL BE PLACED WITH A ASPHALT PAVING EQUIPMENT MEETING THE REQUIREMENTS OF TXDOT ITEM 320, "EQUIPMENT FOR ASPHALTIC CONCRETE PAVEMENT", UNLESS OTHERWISE APPROVED BY THE MAINTENANCE SUPERVISOR."
    - 23.5. "TACK COAT WILL BE APPLIED WITH AN ASPHALT DISTRIBUTOR AND SPREAD ACROSS THE SURFACE RECEIVING THE TACK COAT BY MULTIPLE PASSES OF A PNEUMATIC ROLLER. THE APPLICATION OF TACK COAT AND THE NUMBER OF PASSES OF THE PNEUMATIC ROLLER WILL BE SUFFICIENT TO MAKE THE SURFACE AND EXPOSED EDGES CONSISTENTLY BLACK WITH NO AREAS DEVOID OF TACK. ASPHALT FOR TACK COAT SHALL MEET TXDOT SPECS AND BE FROM A TXDOT APPROVED SOURCE."
24. "ALL SURFACE AGGREGATES WILL MEET THE REQUIREMENTS OF TXDOT FRICTION CLASSIFICATION "B" AND WILL MEET PG BINDER GRADE 70-22."
25. "ALL SURFACE ASPHALT CONCRETE PAVEMENT WILL BE UNDER-SEALED WITH A ONE COURSE SURFACE TREATMENT."
26. "ALL ASPHALTIC CONCRETE PAVEMENT USED IN BASE COURSES WILL BE TYPE "A" OR "B" AND WILL MEET PG BINDER GRADE 64-22."
27. "ALL PAVEMENT WIDENING INCLUDING SHOULDERS WILL MATCH THE EXISTING PAVEMENT CROSS SLOPE."
28. "ALL PAVEMENT MARKINGS WILL BE TYPE I THERMOPLASTIC (100 MIL) WITH UNDER-SEAL MEETING THE REQUIREMENTS OF TXDOT ITEM 666, REFLECTORIZED PAVEMENT MARKINGS. THE CONTRACTOR WILL PLACE GUIDE MARKS IN ACCORDANCE WITH ITEM 666 AND WILL MAKE ARRANGEMENTS FOR TXDOT INSPECTION OF THE PAVEMENT MARKING LAYOUT PRIOR TO PLACEMENT OF TRIPING. EQUIPMENT USED FOR THE PLACEMENT OF STRIPING WILL MEET THE PRODUCTION REQUIREMENTS OF ITEM 666 UNLESS OTHERWISE APPROVED IN ADVANCE BY THE TXDOT MAINTENANCE SUPERVISOR."
29. "EXISTING PAVEMENT MARKINGS THAT CONFLICT WITH PROPOSED PAVEMENT MARKINGS WILL BE LIGHTLY GROUND IN A MANNER THAT DOES NOT DAMAGE THE PAVEMENT SURFACE, TO REMOVE ANY PAVEMENT MARKING ACCUMULATION, AND WILL BE COVERED WITH A STRIP SEAL OF 18" MINIMUM WIDTH, CONSISTING OF PRECOATED GRADE 5, FRICTION CLASS B AGGREGATE."
30. "ALL MATERIALS AND CONSTRUCTION METHODS USED IN STATE RIGHT OF WAY WILL MEET TXDOT SPECIFICATIONS. THIS SUPERSEDES ALL OTHER SPECIFICATIONS IN THE PLANS."
31. "ALL TURN LANE CONCRETE PAVEMENT IN STATE ROW WILL MEET THE REQUIREMENTS OF TXDOT ITEM 360 CLASS P CONCRETE AND WILL BE BATCHED AT CONCRETE PLANTS HAVING A CURRENT APPROVED MIX DESIGN. CLASS P CONCRETE SHALL HAVE 7 AND 28 DAY COMPRESSIVE STRENGTH OF 3200 PSI AND 4400 PSI RESPECTIVELY."
32. "WHEN WIDENING EXISTING CONCRETE PAVEMENTS, JOINTS IN THE NEW PAVEMENT WILL MATCH JOINTS IN EXISTING PAVEMENT AND CURB."
33. "THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT TXDOT APPROVED MATERIALS, MIX DESIGNS, APPROVED SOURCES AND PRODUCTS ARE USED FOR ALL WORK IN STATE ROW. THE CONTRACTOR WILL ARRANGE FOR THE SERVICES OF A QUALIFIED TESTING LABORATORY FOR ALL ITEMS REQUIRING TESTING AND WILL NOTIFY TXDOT OF ANY DISCREPANCIES BETWEEN TEST RESULTS AND TXDOT SPECS IN A TIMELY MANNER. THE CONTRACTOR WILL PROVIDE TO TXDOT INVOICES AND TESTING RESULTS AS SOON THEY ARE AVAILABLE. FAILURE TO DO THIS WILL RESULT IN REJECTION OF THE WORK."
34. "SAWING OF CONTRACTION/CONSTRUCTION JOINTS IN CONCRETE PAVEMENT WILL BE ACCOMPLISHED AS SOON AS PERSONNEL CAN WALK ON THE CONCRETE WITHOUT DAMAGING THE SURFACE REGARDLESS OF TIME OF DAY OR WEATHER CONDITIONS. STAND-BY POWER DRIVEN CONCRETE SAWS WILL BE PROVIDED DURING THE SAWING OPERATION. CURING COMPOUND WILL BE RE-APPLIED TO THE SAWED JOINT IMMEDIATELY UPON SAWING THE JOINT."
35. "GUARDRAIL SGT'S WILL BE TYPE 3 UNLESS OTHERWISE APPROVED BY THE TXDOT MAINTENANCE SUPERVISOR. GUARDRAIL MOW STRIP PLACED ADJACENT TO OTHER CONCRETE RIP-RAP WILL BE SEPARATED BY A FORMED CONSTRUCTION JOINT."
36. "ANY CONCRETE CURB TO BE REMOVED WILL BE SAW-CUT AT THE LIMITS OF REMOVAL AND BE REMOVED ENTIRELY. SLICING THE TOP PORTION OF THE CURB OFF AND LEAVING REMAINING PORTION OF CURB IN PLACE IS UNACCEPTABLE. "
37. "ANY DAMAGE TO TXDOT FACILITIES WILL BE REPAIRED AT NO EXPENSE TO THE STATE, TO TXDOT'S SATISFACTION."
38. "SIDEWALKS PLACED IN THE HIGHWAY RIGHT-OF-WAY WILL BE A MINIMUM WIDTH OF FIVE FEET OR COMPLY WITH THE MORE STRINGENT WIDTH AS REQUIRED BY CITY ORDINANCE AND WILL MEET ALL OTHER REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT. PEDESTRIAN RAMPS WILL BE PROVIDED AT STREET AND DRIVEWAY INTERSECTIONS AS SHOWN ON THE CURRENT STATE STANDARD FOR PEDESTRIAN FACILITIES. COLOR CONTRAST AND TEXTURING OF PEDESTRIAN RAMPS WILL BE PLACE AT STREET INTERSECTION RAMPS ONLY AS SHOWN ON THE CURRENT STATE STANDARD FOR PEDESTRIAN FACILITIES. PEDESTRIAN RAMPS AT DRIVEWAY INTERSECTIONS WILL NOT RECEIVE ANY COLOR CONTRAST OR TEXTURING. METAL PLATING FOR SIDEWALK BRIDGES WILL MATCH THE TYPICAL WIDTH OF THE APPROACH SIDEWALK. HIS MAY RESULT IN A WIDTH THAT IS GREATER THAN SHOWN IN THE STANDARD DETAILS INCLUDED IN THE PLANS."
39. "THE CONTRACTOR WILL USE BEST MANAGEMENT PRACTICES (BMP'S) TO MINIMIZE EROSION AND SEDIMENTATION IN THE STATE RIGHT OF WAY RESULTING FROM THE PROPOSED CONSTRUCTION. RE-VEGETATION OF DISTURBED AREAS WILL BE COMPLETED IN ACCORDANCE WITH TXDOT STANDARD SPECIFICATIONS. PERMANENT VEGETATIVE COVER MUST ACHIEVE 70% COVERAGE PRIOR TO PROJECT ACCEPTANCE. SOIL RETENTION BLANKETS MAY BE REQUIRED TO PREVENT EROSION OF TOPSOIL PRIOR TO VEGETATION RE-ESTABLISHMENT"
40. "PRIOR TO SEEDING OR RE-VEGETATION THE FRONT SLOPES WILL BE SHOULDERED UP WITH TOPSOIL TO ELIMINATE ANY PAVEMENT EDGE DROP-OFF."
41. "MUD TRACKED ONTO THE ROADWAY FROM THE SITE WILL BE IMMEDIATELY REMOVED TO THE SATISFACTION OF TXDOT."
42. "IT WILL BE THE DEVELOPER/OWNER'S RESPONSIBILITY TO CLEAN OUT, TO THE STATE'S SATISFACTION, ANY DRAINAGE STRUCTURE OR STORM SEWER SYSTEM THAT BECOMES SILTED AS A RESULT OF THEIR OPERATIONS."
43. "THE ADJUSTMENT OF ANY UTILITIES IN STATE RIGHT OF WAY OR ADJACENT PRIVATE EASEMENT WILL BE THE RESPONSIBILITY OF THE DEVELOPER/OWNER'S."
44. "THE CONTRACTOR IS RESPONSIBLE FOR PLACING AND MAINTAINING EXISTING SIGNS ON TXDOT APPROVED TEMPORARY MOUNTS UNTIL PERMANENT SIGNS ARE PLACED."
45. "THE FINAL PLACEMENT OF PERMANENT SIGNS WILL BE COORDINATED PRIOR TO PLACEMENT WITH THE LOCAL TXDOT MAINTENANCE SUPERVISOR."
46. "FOR WORK WITHIN THE STATE RIGHT OF WAY WHERE REMOVAL OF MATERIALS OR DEBRIS WITHIN THE CONSTRUCTION LIMITS AND NOT INCORPORATED IN THE FINISHED ROADWAY SECTION OF RIGHT OF WAY, WILL BE DISPOSED OF IN A MANNER ACCEPTABLE TO THE MAINTENANCE SUPERVISOR AT NO EXPENSE TO THE STATE. MATERIALS THAT ARE NOT DETERMINED TO BE SALVAGEABLE BY THE MAINTENANCE SUPERVISOR BECOME THE PROPERTY OF THE CONTRACTOR FOR PROPER DISPOSAL AT THEIR EXPENSE. MATERIALS DETERMINED TO BE SALVAGEABLE WILL BE RETURNED TO THE STATE AND DELIVERED TO THE LOCATION AS DETERMINED BY THE MAINTENANCE SUPERVISOR."
47. "REGARDLESS OF ERRORS AND OMISSIONS IN INFORMATION PROVIDED IN THE PLANS OR CROSS-SECTIONS THE PERMITEE IS RESPONSIBLE FOR PROVIDING FOR POSITIVE DRA



CAUTION: CONTACT TEXAS 811 AND LOCAL UTILITY PROVIDERS TO LOCATE EXISTING UTILITIES PRIOR TO CONSTRUCTION.
CONTACT GESSNER ENGINEERING IF CONFLICTS OCCUR.

N

0 40 80 120
SCALE: 1"= 40'

PROJECT BENCHMARK:

BM1 BENCHMARK DESCRIPTION:
"X" CUT IN CONCRETE ON NORTH SIDE OF WINDGATE DRIVE NEAR INTERSECTION WITH FM 306
ELEVATION = 676.19'

BM2 BENCHMARK DESCRIPTION:
"X" CUT IN CONCRETE
ELEVATION = 678.20'

LEGEND

- EXISTING BUILDING
- PROPOSED BUILDING
- PROPOSED 4" CONCRETE SIDEWALK
- PROPOSED 6" CONCRETE PAVEMENT
- PROPOSED 8" CONCRETE PAVEMENT
- EXISTING PROPERTY LINE
- EXISTING PAVEMENT EDGE
- EXISTING BASE EASEMENT
- EXISTING FLOW LINE
- OE — EXISTING OVERHEAD ELECTRIC LINE
- FIRE LANE — EXISTING FIRELANE
- SA — EXISTING SANITARY SEWER LINE
- 8ST — EXISTING STORM SEWER LINE
- EXISTING OVERHEAD ELECTRIC LINE
- FO — EXISTING FIBER OPTIC LINE
- W — EXISTING WATER LINE
- EXISTING FENCE CHAIN LINE
- G — EXISTING GAS LINE
- PROPOSED FENCE IRON LINE
- FIRE LANE — PROPOSED FIRELANE
- SA — PROP. SANITARY SEWER
- 8ST — PROP. STORM SEWER
- W — PROP. WATER LINE
- G — PROP. GAS LINE
- FH — EX. / PROP. FIRE HYDRANT
- EX. / PROP. TREE
- EX. / PROP. SIGN
- LP — EX. / PROP. LIGHT POLE
- W — EX. / PROP. WATER METER
- ST — EX. / PROP. STORM SEWER MANHOLE
- SA — EX. / PROP. SANITARY SEWER MANHOLE
- PP — EXISTING POWER POLE
- EXISTING GUY WIRES
- EXISTING BOLLARD
- E — EXISTING ELECTRIC DUC BANK
- MP — EXISTING MAIN PHASE
- CO — EXISTING CLEAN OUT
- EXISTING WATER VALVE TYP WV
- EXISTING WATER VALVE TYP ICV

PARKING LOT WEST ANALYSIS	
PARKING SPACES PROVIDED:	
STANDARD=	34
HANDICAP=	2
TOTAL SPACES PROVIDED:	36

BROWN REYNOLDS WATFORD ARCHITECTS
2705 BEE CAVE ROAD, BUILDING ONE, SUITE 400, AUSTIN, TEXAS 78746
512.328.0011 | WWW.BRWARCHITECTS.COM
BRW

STATE OF TEXAS
JEREMY N. PETERS
100217
LICENSED PROFESSIONAL ENGINEER
11/1/22

GESSNER ENGINEERING
Corporate Office
2501 Ashford Drive
College Station, Texas 77840
www.gessnerengineering.com
FIRM REGISTRATION NUMBER:
TBPE F-7451, TBPLS F-10059310
GESSNER ENGINEERING

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DATE	11/01/2022
DRAWN BY	NF
CHECKED BY	JP
BRW PROJECT NUMBER	

NEW BRAUNFELS FIRE TRAINING SITE INFRASTRUCTURE
353 FM 306
NEW BRAUNFELS, TX 78130

City of New Braunfels

NO.	REVISION	DATE

100% CD

C1.0

SITE PLAN

CAUTION: CONTACT TEXAS 811 AND LOCAL UTILITY PROVIDERS TO LOCATE EXISTING UTILITIES PRIOR TO CONSTRUCTION.
CONTACT GESSNER ENGINEERING IF CONFLICTS OCCUR.

N

0 40 80 120
SCALE: 1"= 40'

PROJECT BENCHMARK:

BM1 BENCHMARK DESCRIPTION:
"X" CUT IN CONCRETE ON NORTH SIDE OF WINDGATE DRIVE NEAR INTERSECTION WITH FM 306
ELEVATION = 676.19'

BM2 BENCHMARK DESCRIPTION:
"X" CUT IN CONCRETE
ELEVATION = 678.20'

BUILDING #12
10,570 S.F.
FFE 682.50

BUILDING #11
12,144 S.F.
FFE 682.50

BUILDING #10
10,570 S.F.
FFE 684.00

REMAINING PORTION OF LOT 2, BLOCK A, TRI-CITY SUBDIVISION (AMENDED) (DOC. NO. 202106011253, MPRCCT) KOOTNZ/MCCOMBS 1, LTD. (DOC. NO. 202206040302, OPRCCT)

EX. BOUNDARY LINE

EX. AC PAD

MAGNAIL
N:13816925.22
E:2758619.22
Z:678.11

"X" CUT
N:13816869.87
E:2758786.53
Z:678.28

60D NAIL
N:13816561.99
E:2758971.30
Z:678.81

60D NAIL
N:13816316.87
E:2758905.93
Z:678.51

TRACT 3 100' DRAINAGE EASEMENT AGREEMENT
DOC. NO 201106011797, OPRCCT
SCHEDULE B ITEM 10.(M.))

BLOCK I
HEATHER GLEN PHASE 3
(DOC. NO. 201806043872
O.P.R.C.C.T.

HEA I HER GLEN PHASE 3
DOC. NO. 201806043872
O.P.R.C.C.T.

PROP. 6' TALL FENCECRETE WALL, REF. ARCH PLANS

PROP. FIRE TRAINING DRAFT TANK

PROP. PAVEMENT BOLLARDS 4' O.C. TYP.

PROP. BURN TOWER FFE: 683 3,464 SF

PROP. BURN TOWER FFE: 680.50 3,304 SF

PROP. FH

PROP. FENCING. SEE ARCHITECTURAL PLANS FOR DETAILS

PROP. TRAIN. BUILDING FACILITY BUILDING FFE: 683.00

PROP. GATE REF. ARCH PLANS FOR DETAILS

CONNECT TO EX. PAVEMENT

PROP. GATE REF. ARCH PLANS FOR DETAILS

EX. CHAIN LINK FENCE

EX. CHAIN LINK FENCE

CAUTION! EX. OVERHEAD ELECTRIC LINE

NEW BRAUNFELS STEWARDSHIP PROPERTIES LLC (DOC. NO. 201606020245)

LEGEND

- EXISTING PAVEMENT
- EXISTING BUILDING
- PROPOSED BUILDING
- PROPOSED 4" CONCRETE SIDEWALK
- PROPOSED 6" CONCRETE PAVEMENT
- PROPOSED 8" CONCRETE PAVEMENT
- EXISTING PROPERTY LINE
- EXISTING PAVEMENT EDGE
- EXISTING BASE EASEMENT
- EXISTING FLOW LINE
- EXISTING OVERHEAD ELECTRIC LINE
- EXISTING FIRELANE
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- EXISTING FIBER OPTIC LINE
- EXISTING WATER LINE
- EXISTING FENCE CHAIN LINE
- EXISTING GAS LINE
- PROPOSED FENCE IRON LINE
- PROPOSED FIRELANE
- PROP. SANITARY SEWER
- PROP. STORM SEWER
- PROP. WATER LINE
- PROP. GAS LINE
- EX. / PROP. FIRE HYDRANT
- EX. / PROP. TREE
- EX. / PROP. SIGN
- EX. / PROP. LIGHT POLE
- EX. / PROP. WATER METER
- EX. / PROP. STORM SEWER MANHOLE
- EX. / PROP. SANITARY SEWER MANHOLE
- EXISTING POWER POLE
- EXISTING GUY WIRES
- EXISTING BOLLARD
- EXISTING ELECTRIC DUC BANK
- EXISTING MAIN PHASE
- EXISTING CLEAN OUT
- EXISTING WATER VALVE TYP WV
- EXISTING WATER VALVE TYP ICV

PARKING LOT WEST ANALYSIS	
PARKING SPACES PROVIDED:	
STANDARD=	39
HANDICAP=	2
TOTAL SPACES PROVIDED:	41

BROWN REYNOLDS WATFORD ARCHITECTS
2705 BEE CAVE ROAD, SUITE 220, AUSTIN, TEXAS 78746
512.474.1664 WWW.BRWARCHITECTS.COM

GESSNER ENGINEERING
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2501 Ashford Drive
College Station, Texas 77840
www.gessnerengineering.com
FIRM REGISTRATION NUMBER:
TBPE F-7-451, TBPLS F-1035310

STATE OF TEXAS
JEREMY N. PETERS
100217
LICENSED PROFESSIONAL ENGINEER
11/22

NEW BRAUNFELS FIRE TRAINING SITE INFRASTRUCTURE
353 FM 306
NEW BRAUNFELS, TX 78130

City of New Braunfels

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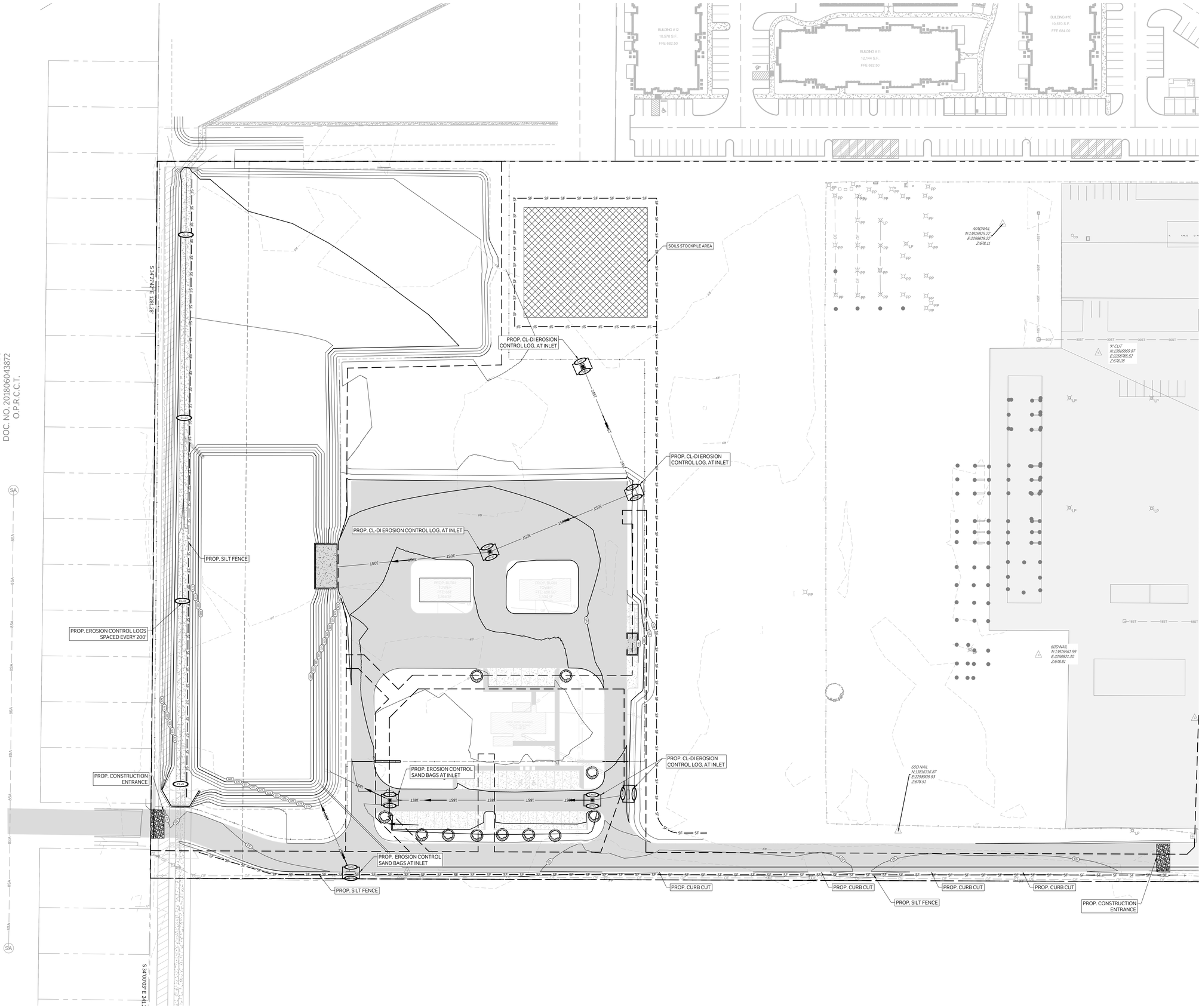
DATE	11/01/2022
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BRW PROJECT NUMBER	

NO.	REVISION	DATE

100% CD

C1.1

FIRE COVERAGE PLAN



CAUTION: CONTACT TEXAS 811 AND LOCAL UTILITY PROVIDERS TO LOCATE EXISTING UTILITIES PRIOR TO CONSTRUCTION.
CONTACT GESSNER ENGINEERING IF CONFLICTS OCCUR.

N

0 40 80 120
SCALE: 1"= 40'

PROJECT BENCHMARK:

BM1 BENCHMARK DESCRIPTION:
"X" CUT IN CONCRETE ON NORTH SIDE OF WINDGATE DRIVE NEAR INTERSECTION WITH FM 306
ELEVATION = 676.19'

BM2 BENCHMARK DESCRIPTION:
"X" CUT IN CONCRETE
ELEVATION = 678.20'

LEGEND

- CONSTRUCTION ENTRANCE, INSTALLED PER DETAIL
- PROPERTY LINE
- 340 EXISTING CONTOURS
- 340 PROPOSED CONTOURS
- EXISTING FLOW PATH
- PROPOSED FLOW PATH
- SF SILT FENCE, INSTALLED PER DETAIL
- CL-D PROPOSED DAM EROSION CONTROL, LOG- 18"
- SAND PROPOSED SAND BAG DAM

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.

100% CD

BROWN REYNOLDS WATFORD ARCHITECTS
2705 BEE CAVE ROAD, BUILDING ONE, SUITE 400, AUSTIN, TEXAS 78746
512.328.8181 WWW.BRWARCHITECTS.COM
BRW

STATE OF TEXAS
JEREMY N. PETERS
100217
LICENSED PROFESSIONAL ENGINEER
11/01/22

GESSNER ENGINEERING
Corporate Office
2501 Ashford Drive
College Station, Texas 77840
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FIRM REGISTRATION NUMBER: TBPE F-7-451, TBPLS F-10093510
GESSNER ENGINEERING

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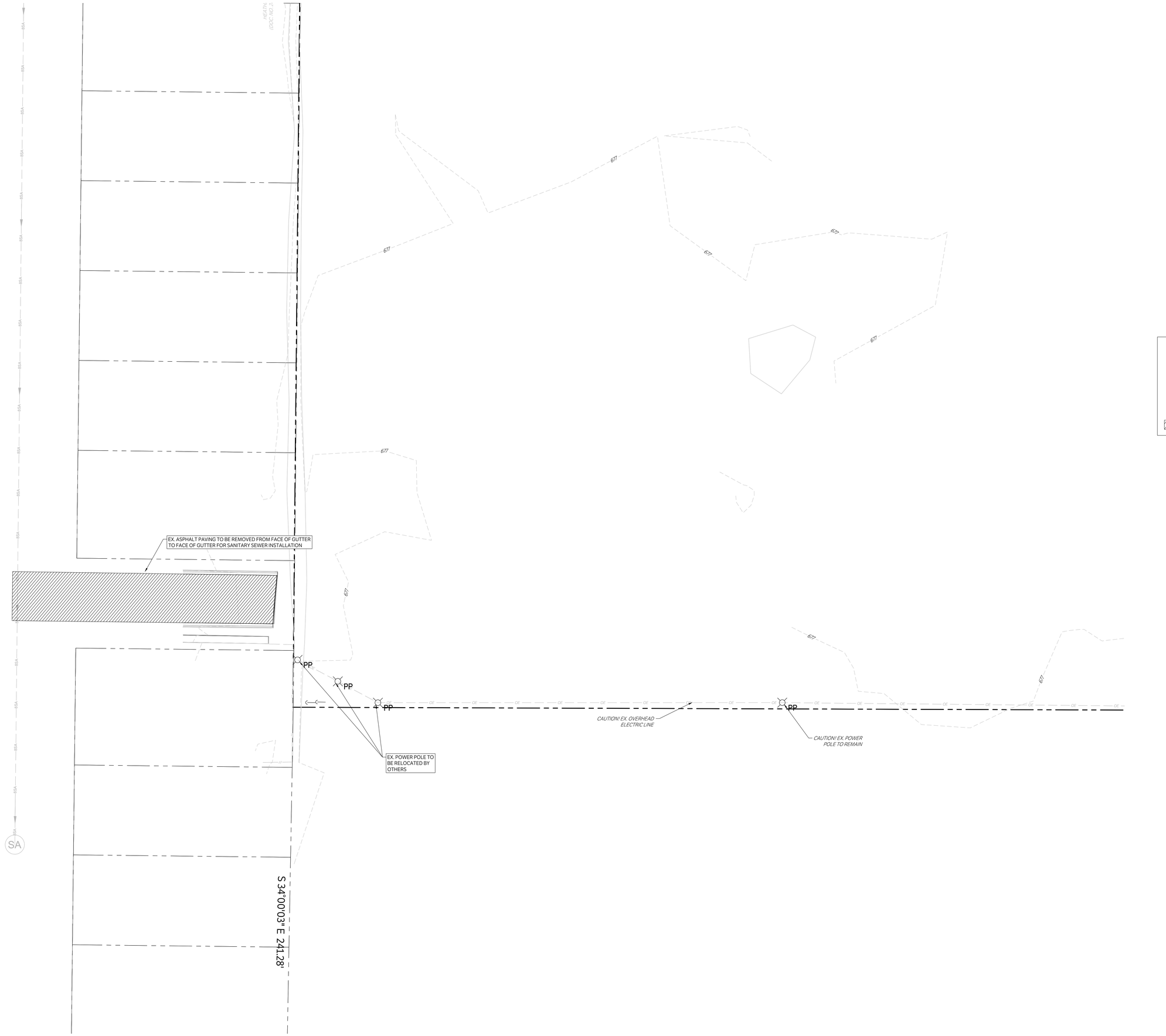
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BRW PROJECT NUMBER	

NEW BRAUNFELS FIRE TRAINING SITE INFRASTRUCTURE
353 FM 306
NEW BRAUNFELS, TX 78130

NO.	REVISION	DATE

C2.0

EROSION CONTROL PLAN



CAUTION: CONTACT TEXAS 811 AND LOCAL UTILITY PROVIDERS TO LOCATE EXISTING UTILITIES PRIOR TO CONSTRUCTION.
CONTACT GESSNER ENGINEERING IF CONFLICTS OCCUR.

N

0 20 40 60
SCALE: 1"= 20'

PROJECT BENCHMARK:

BM1 BENCHMARK DESCRIPTION:
"X" CUT IN CONCRETE ON NORTH SIDE OF WINDGATE DRIVE NEAR INTERSECTION WITH FM 306
ELEVATION = 676.19'

BM2 BENCHMARK DESCRIPTION:
"X" CUT IN CONCRETE
ELEVATION = 678.20'

LEGEND

- PROP. TREE PROTECTION FENCE (REMOVE IF LANDSCAPE ARCHITECT IS HANDLING THIS)
- EX. TREE TO BE REMOVED
- EX. TREE TO REMAIN
- DEMOLITION AREA

100% CD

BROWN REYNOLDS WATFORD ARCHITECTS
2700 EARL RUDDER FWY SOUTH, SUITE 4200, COLLEGE STATION, TEXAS 77845
979.846.7700 | BRWARCHITECTS.COM

STATE OF TEXAS
JEREMY N. PETERS
100217
LICENSED PROFESSIONAL ENGINEER
11/01/22

GESSNER ENGINEERING
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College Station, Texas 77840
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DATE	11/01/2022
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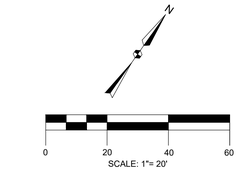
NEW BRAUNFELS FIRE TRAINING SITE INFRASTRUCTURE
353 FM 306
NEW BRAUNFELS, TX 78130

NO.	REVISION	DATE

C3.0

DEMOLITION PLAN

CAUTION: CONTACT TEXAS 811 AND LOCAL UTILITY PROVIDERS TO LOCATE EXISTING UTILITIES PRIOR TO CONSTRUCTION.
CONTACT GESSNER ENGINEERING IF CONFLICTS OCCUR.



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ELEVATION = 676.19'

BM2 BENCHMARK DESCRIPTION:
"X" CUT IN CONCRETE
ELEVATION = 678.20'

LEGEND

- PROP. TREE PROTECTION FENCE
- EX. TREE TO BE REMOVED
- EX. TREE TO REMAIN
- DEMOLITION AREA

EX. PAVEMENT TO BE REMOVED FOR STORM SEWER

EX. PAVEMENT TO BE REMOVED FOR ALTERNATE STORM SEWER

BROWN REYNOLDS WATFORD
ARCHITECTS
2350 EARL RUDDER FWY SOUTH
SUITE 400
COLLEGE STATION, TEXAS 77845
979.846.7700
BRWARCHITECTS.COM

BRW

STATE OF TEXAS
JEREMY N. PETERS
100217
LICENSED
PROFESSIONAL ENGINEER
11/11/22

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College Station, Texas 77840
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TBPE REGISTRATION NUMBER: TBPE F-7-451, TBPLS F-10093510

GESSNER ENGINEERING

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DATE 11/01/2022
DRAWN BY NF
CHECKED BY JP
BRW PROJECT NUMBER

NEW BRAUNFELS FIRE TRAINING SITE INFRASTRUCTURE
353 FM 306
NEW BRAUNFELS, TX 78130

City of New Braunfels

NO.	REVISION	DATE

100% CD

C3.1

DETENTION POND FORCE MAIN DEMOLITION PLAN

NOTES:

A) All utilities to be constructed prior to streets.
B) No valves, hydrants, cleanouts etc. shall be constructed within curbs, sidewalks, or driveways.
C) 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.

CAUTION: CONTACT TEXAS 811 AND LOCAL UTILITY PROVIDERS TO LOCATE EXISTING UTILITIES PRIOR TO CONSTRUCTION.
CONTACT GESSNER ENGINEERING IF CONFLICTS OCCUR.

N

0 40 80 120
SCALE: 1"= 40'

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ELEVATION = 676.19'

BM2 BENCHMARK DESCRIPTION:
"X" CUT IN CONCRETE
ELEVATION = 678.20'

REMAINING PORTION OF LOT 2, BLOCK A, TRI-CITY SUBDIVISION (AMENDED) (DOC. NO. 200706013253, MPRCCT) KOOTNZ/MCCOMBS 1, LTD. (DOC. NO. 200206040302, OPRCCT)

BUILDING #12 10,570 S.F. FFE 682.50

BUILDING #11 12,144 S.F. FFE 682.50

BUILDING #10 10,570 S.F. FFE 684.00

HEATHER GLEN PHASE 3 DOC. NO. 201806043872 O.P.R.C.C.T.

EX. DRAINAGE EASEMENT

PROP. DRAINAGE CHANNEL (BY OTHERS)

S 42°27'42" E 1301.28'

INSTALL: 1 - 4'X 4' FOUR WAY AREA INLET

24" RCP

INSTALL: 1 - 4'X4' JUNCTION BOX

INSTALL: 1 - STANDARD FH ASSEMBLY

INSTALL: 1 - 4'X4' GRATE INLET

PROP. FIRE WATER DRAFT TANK

30" RCP

PROP. BURN TOWER FFE: 681 1,456 SF

PROP. BURN TOWER FFE: 680.50 1,304 SF

6" DIP

PROP. PROPANE TANK

INSTALL: 1 - STANDARD FH ASSEMBLY

6" DIP

INSTALL: 1- DOGHOUSE MANHOLE (PUBLIC) CONNECT EX. SAN SWR. MAIN. FIELD VERIFY ELEV. AND LOCATION. TOP TO BE ADJUSTED TO FINISHED GRADE

PROP. 3:1 END TREATMENT - MATCH POND SLOPE

PROP. 2' WIDE CONCRETE APRON W/ CONCRETE BAFFLE BLOCKS

PROP. 3:1 END TREATMENT - MATCH POND SLOPE

8" SDR 26 PVC SEWER SERVICE (PUBLIC)

INSTALL: 1- STD. 4' SAN. SWR. MANHOLE (PUBLIC) BOLT AND GASKET LID

6" SEWER SERVICE (PRIVATE)

PROP. BURN FACILITY BUILDING FFE: 683.00

2" COPPER DOMESTIC WATER SERVICE

8" PVC

8" PVC SDR 35

INSTALL: 1 - 3'X3' GRATE INLET

INSTALL: 6" BLIND FLANGE PROVIDE END OF LINE BLOCKING

18" RCP

INSTALL: 1 - 3'X3' GRATE INLET

INSTALL: 1 - STD 10' CURB INLET

INSTALL: 1 - 2" IRRIGATION METER W/ RPZ BACKFLOW PREVENTER REF. LANDSCAPE ARCH. FOR CONTINUATION

INSTALL: 1 - STANDARD FH ASSEMBLY W/ 6" TEE AND RESTRAINED GATE VALVE

2" COPPER IRRIGATION SERVICE

INSTALL: 1 - 2" DOMESTIC WATER METER

INSTALL: 1 - STD 10' CURB INLET

PROP. 4" UNDERGROUND ELECTRICAL CONDUIT, REF.MEP.

NEW BRAUNFELS STEWARDSHIP PROPERTIES LLC (DOC. NO. 201606020245)

MAGNAIL N:13816925.22 E:2258619.22 Z:678.11

"X" CUT N:13816859.87 E:2258395.52 Z:678.28

60D NAIL N:13816316.87 E:2258905.93 Z:678.51

6" WATER LINE STUBOUT

INSTALL: 6" BLIND FLANGE PROVIDE END OF LINE BLOCKING

8" WATER

CONNECT TO EX. 8" WA LINE

60D NAIL N:13816560.99 E:2258921.30 Z:678.91

MAGNAIL N:13816603.4 E:2259102.4 Z:678.59

16" DIP LIFT STATION FORCE MAIN

S 34°00'03" E 241.

LEGEND

- EXISTING BUILDING
- PROPOSED BUILDING
- PROPOSED ASPHALT
- PROPOSED 4" CONCRETE SIDEWALK
- PROPOSED 6" CONCRETE PAVEMENT
- PROPOSED 8" CONCRETE PAVEMENT
- EXISTING PROPERTY LINE
- EXISTING PAVEMENT EDGE
- EXISTING BASE EASEMENT
- EXISTING FLOW LINE
- EXISTING OVERHEAD ELECTRIC LINE
- EXISTING FIRELANE
- EXISTING SANITARY SEWER LINE
- EXISTING STORM SEWER LINE
- EXISTING OVERHEAD ELECTRIC LINE
- EXISTING FIBER OPTIC LINE
- EXISTING WATER LINE
- EXISTING FENCE CHAIN LINE
- EXISTING GAS LINE
- PROPOSED FENCE IRON LINE
- PROPOSED FIRELANE
- PROP. SANITARY SEWER
- PROP. STORM SEWER
- PROP. WATER LINE
- PROP. GAS LINE
- EX. / PROP. FIRE HYDRANT
- EX. / PROP. TREE
- EX. / PROP. SIGN
- EX. / PROP. LIGHT POLE
- EX. / PROP. WATER METER
- EX. / PROP. STORM SEWER MANHOLE
- EX. / PROP. SANITARY SEWER MANHOLE
- EXISTING POWER POLE
- EXISTING GUY WIRES
- EXISTING BOLLARD
- EXISTING ELECTRIC DUC BANK
- EXISTING MAIN PHASE
- EXISTING CLEAN OUT
- EXISTING WATER VALVE TYP. WV
- EXISTING WATER VALVE TYP ICV

100%CD

BROWN REYNOLDS WATFORD ARCHITECTS
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FIRM REGISTRATION NUMBER: TBPE F-7451 / TBPLS F-10093910

STATE OF TEXAS
JEREMY N. PETERS
100217
LICENSED PROFESSIONAL ENGINEER
11/01/22

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DATE	11/01/2022
DRAWN BY	NF
CHECKED BY	JP
BRW PROJECT NUMBER	

NEW BRAUNFELS FIRE TRAINING SITE INFRASTRUCTURE
353 FM 306
NEW BRAUNFELS, TX 78130

NO.	REVISION	DATE

C4.0

UTILITY PLAN

CAUTION: CONTACT TEXAS 811 AND LOCAL UTILITY PROVIDERS TO LOCATE EXISTING UTILITIES PRIOR TO CONSTRUCTION.
CONTACT GESSNER ENGINEERING IF CONFLICTS OCCUR.

N

0 40 80 120
SCALE: 1"= 40'

PROJECT BENCHMARK:

BM1 BENCHMARK DESCRIPTION:
"X" CUT IN CONCRETE ON NORTH SIDE OF WINDGATE DRIVE NEAR INTERSECTION WITH FM 306
ELEVATION = 676.19'

BM2 BENCHMARK DESCRIPTION:
"X" CUT IN CONCRETE
ELEVATION = 678.20'

PROP. 2'X5' BOX CULVERT COORDINATE W/ ESCALANTE PLANS FOR UPSTREAM ELEVATION

PROP. DRAINAGE EASEMENT

S 34°27'42" E 1281.28'

LIMITS OF ESCALANTE APTS, PHASE 1 OUTFALL CHANNEL

EXISTING 100' WIDE DRAINAGE EASEMENT

PROPOSED REGIONAL DETENTION POND EXPANSION

STA 4+87.20, ST-1
INSTALL:
1 - 4' X 4' FOUR WAY AREA INLET
TOP=677.00'
INV 24" OUT (SE) = 673.30

24" RCP @ 0.72%

STA 3+38.43, ST-1
INSTALL:
1 - 4'X4' JUNCTION BOX
TOP=679.66'
INV 24" IN (NW) = 672.23
INV 30" OUT (SW) = 672.13

STA 0+00.00, ST-1
CONNECT TO PROP. DRAFT TANK
INV=670.00'

STA 1+67.99, ST-1
INSTALL:
1 - 4'X4' GRATE INLET
TOP=679.10'
INV 30" IN (NE) = 671.10
INV 30" OUT (SW) = 671.00

30" RCP @ 0.60%

STA 0+00.00, ST-8
INSTALL:
CONCRETE BAFFLE BLOCKS AND 2' WIDE CONCRETE APRON
TOP=675.63'
INV 16" IN (E) = 674.27

STA 0+08.83, ST-2
INSTALL:
1 - 3:1 END TREATMENT
TOP=676.09'
INV 18" IN (E) = 674.27

STA 0+80.63, ST-2
INSTALL:
1 - 3'X3' GRATE INLET
TOP=678.88'
INV 18" IN (NE) = 674.71
INV 18" OUT (W) = 674.61

STA 0+07.74, ST-4
INSTALL:
1 - 3:1 END TREATMENT
TOP=676.01'
INV 18" IN (SE) = 674.30

18" RCP @ 0.47%

18" RCP @ 0.50%

STA 3+01.80, ST-2
INSTALL:
1 - 3'X3' GRATE INLET
TOP=679.26'
INV 18" IN (NE) = 675.92
INV 18" OUT (SW) = 675.82

18" RCP @ 0.50%

STA 3+41.32, ST-2
INSTALL:
1 - STD 10' CURB INLET
TOP=680.15'
INV 18" OUT (SW) = 676.11

PROP. VARIABLE WIDTH P.U.E.

PROP. 15' P.U.E.

PROPOSED DETENTION OUTLET STRUCTURE
Q_{100} = 51.12 CFS
(REF. ESCALANTE APARTMENTS REG. DRAINAGE REPORT)

STA 0+98.03, ST-4
INSTALL:
1 - STD 10' CURB INLET
TOP=678.02'
INV 18" OUT (NW) = 675.18

EX. CULVERT CROSSING INSTALLED BY ESCALANTE DEVELOPMENT REF. ESCALANTE APARTMENT PLANS FOR DETAILS

S 34°00'03" E 24.28'

STA 1+24.22, ST-8
INSTALL:
1 - 45° HORIZONTAL BEND
TOP=678.12'
INV 16" IN (NE) = 674.00
INV 16" OUT (W) = 674.00

124.22 LF 16" DIP LIFT STATION FORCE MAIN

1467.56 LF 16" DIP LIFT STATION FORCE MAIN

PROP. 30' P.U.E.

WATER LINE

NOTES:

A) All utilities to be constructed prior to streets.
B) No valves, hydrants, cleanouts etc. shall be constructed within curbs, sidewalks, or driveways.
C) 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.

LEGEND

- EXISTING PAVEMENT
- EXISTING BUILDING
- PROPOSED BUILDING
- PROPOSED 4" CONCRETE SIDEWALK
- PROPOSED 6" CONCRETE PAVEMENT
- PROPOSED 8" CONCRETE PAVEMENT
- EXISTING PROPERTY LINE
- EXISTING PAVEMENT EDGE
- EXISTING BASE EASEMENT
- EXISTING FLOW LINE
- OE — EXISTING OVERHEAD ELECTRIC LINE
- FIRE LANE — EXISTING FIRELANE
- SA — EXISTING SANITARY SEWER LINE
- EXISTING STORM SEWER LINE
- EXISTING OVERHEAD ELECTRIC LINE
- FO — EXISTING FIBER OPTIC LINE
- W — EXISTING WATER LINE
- EXISTING FENCE CHAIN LINE
- G — EXISTING GAS LINE
- PROPOSED FENCE IRON LINE
- FIRE LANE — PROPOSED FIRELANE
- SA — PROP. SANITARY SEWER
- PROP. STORM SEWER
- W — PROP. WATER LINE
- G — PROP. GAS LINE
- FH — EX. / PROP. FIRE HYDRANT
- EX. / PROP. TREE
- EX. / PROP. SIGN
- LP — EX. / PROP. LIGHT POLE
- W — EX. / PROP. WATER METER
- ST — EX. / PROP. STORM SEWER MANHOLE
- SA — EX. / PROP. SANITARY SEWER MANHOLE
- PP — EXISTING POWER POLE
- EXISTING GUY WIRES
- EXISTING BOLLARD
- E — EXISTING ELECTRIC DUC BANK
- MP — EXISTING MAIN PHASE
- CO — EXISTING CLEAN OUT
- EXISTING WATER VALVE TYP WV
- EXISTING WATER VALVE TYP ICV

BROWN REYNOLDS WATFORD ARCHITECTS
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22

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GESSNER ENGINEERING

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DATE	11/01/2022
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NEW BRAUNFELS FIRE TRAINING SITE INFRASTRUCTURE
353 FM 306
NEW BRAUNFELS, TX 78130

NO.	REVISION	DATE

100%CD

C5.0

STORM SEWER PLAN



CAUTION: CONTACT TEXAS 811 AND LOCAL UTILITY PROVIDERS TO LOCATE EXISTING UTILITIES PRIOR TO CONSTRUCTION.
CONTACT GESSNER ENGINEERING IF CONFLICTS OCCUR.

N

0 40 80 120
SCALE: 1"= 40'

PROJECT BENCHMARK:

BM1 BENCHMARK DESCRIPTION:
"X" CUT IN CONCRETE ON NORTH SIDE OF WINDGATE DRIVE NEAR INTERSECTION WITH FM 306
ELEVATION = 676.19'

BM2 BENCHMARK DESCRIPTION:
"X" CUT IN CONCRETE
ELEVATION = 678.20'

LEGEND

- EXISTING PAVEMENT
- EXISTING BUILDING
- PROPOSED BUILDING
- PROPOSED 4" CONCRETE SIDEWALK
- PROPOSED 6" CONCRETE PAVEMENT
- PROPOSED 8" CONCRETE PAVEMENT
- EXISTING PROPERTY LINE
- EXISTING PAVEMENT EDGE
- EXISTING BASE EASEMENT
- EXISTING FLOW LINE
- OE — EXISTING OVERHEAD ELECTRIC LINE
- FIRE LANE — EXISTING FIRELANE
- SA — EXISTING SANITARY SEWER LINE
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- PP — EXISTING POWER POLE
- EXISTING GUY WIRES
- EXISTING BOLLARD
- E — EXISTING ELECTRIC DUC BANK
- MP — EXISTING MAIN PHASE
- CO — EXISTING CLEAN OUT
- EXISTING WATER VALVE TYP WV
- EXISTING WATER VALVE TYP ICV

NOTES:

A) All utilities to be constructed prior to streets.
B) No valves, hydrants, cleanouts etc. shall be constructed within curbs, sidewalks, or driveways.
C) 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.

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GESSNER ENGINEERING

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DATE	11/01/2022
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BRW PROJECT NUMBER	22

NEW BRAUNFELS
FIRE TRAINING SITE
INFRASTRUCTURE
353 FM 306
NEW BRAUNFELS, TX 78130

NO.	REVISION	DATE

100%CD

C5.1

STORM SEWER PLAN

CAUTION: CONTACT TEXAS 811 AND LOCAL UTILITY PROVIDERS TO LOCATE EXISTING UTILITIES PRIOR TO CONSTRUCTION.
CONTACT GESSNER ENGINEERING IF CONFLICTS OCCUR.

N

0 40 80 120
SCALE: 1"= 40'

PROJECT BENCHMARK:

BM1 BENCHMARK DESCRIPTION:
"X" CUT IN CONCRETE ON NORTH SIDE OF WINDGATE DRIVE NEAR INTERSECTION WITH FM 306
ELEVATION = 676.19'

BM2 BENCHMARK DESCRIPTION:
"X" CUT IN CONCRETE
ELEVATION = 678.20'

LEGEND

- EXISTING PAVEMENT
- EXISTING BUILDING
- PROPOSED BUILDING
- PROPOSED 4" CONCRETE SIDEWALK
- PROPOSED 6" CONCRETE PAVEMENT
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- EXISTING WATER VALVE TYP WV
- EXISTING WATER VALVE TYP ICV

PROP. 20' P.U.E.
PROP. 15' P.U.E.
PROP. 15' P.U.E.
PROP. 15' P.U.E.
PROP. 20' ELECTRICAL EASEMENT
PROP. VARIABLE WIDTH P.U.E.
PROP. 30' P.U.E.
1467.56 LF 16" DIP LIFT STATION FORCE MAIN
MATCH LINE
MATCH LINE
MATCH LINE
7+00 8+00 9+00 10+00 11+00 12+00 13+00 14+00 15+00 16+03
ALT. No. 4: EXISTING WET WELL TO REMAIN
ALT. No. 3: EXISTING LIFT STATION PUMPS ARE TO REMAIN
ALT. No. 5: EXISTING 12" AND 2" STORM LINES ARE TO REMAIN IN PLACE
EX. 12" AND 2" STORM LINES HAVE BEEN SURVEYED BY CITY TO OUTFALL AT THIS LOCATION
REF. SHEET C10.1 FOR DETAILS OF THIS CONNECTION
EX. 12" AND 2" DUCTILE IRON FORCE MAINS CONTRACTOR TO FIELD VERIFY EXACT DEPTH AND LOCATION

NOTE:
DEDUCTIVE ALT. No. 3: DELETE NEW 12" STORMWATER LIFT STATION DUAL PUMP CONFIGURATION.
EXISTING LIFT STATION AND PUMPS TO REMAIN.

DEDUCTIVE ALT. No. 4: DELETE NEW STORMWATER LIFT STATION 17'-4" OUTSIDE DIAMETER REINFORCED CONCRETE WET WELL.
EXISTING LIFT STATION AND PUMPS TO REMAIN.

DEDUCTIVE ALT. No. 5: DELETE 321 LF OF 16" DUCTILE IRON PIPE.
BEGIN RUNNING DUCTILE IRON PIPE AT HEAVY LINE AS SHOWN ON C5.1.

NOTES:

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B) No valves, hydrants, cleanouts etc. shall be constructed within curbs, sidewalks, or driveways.
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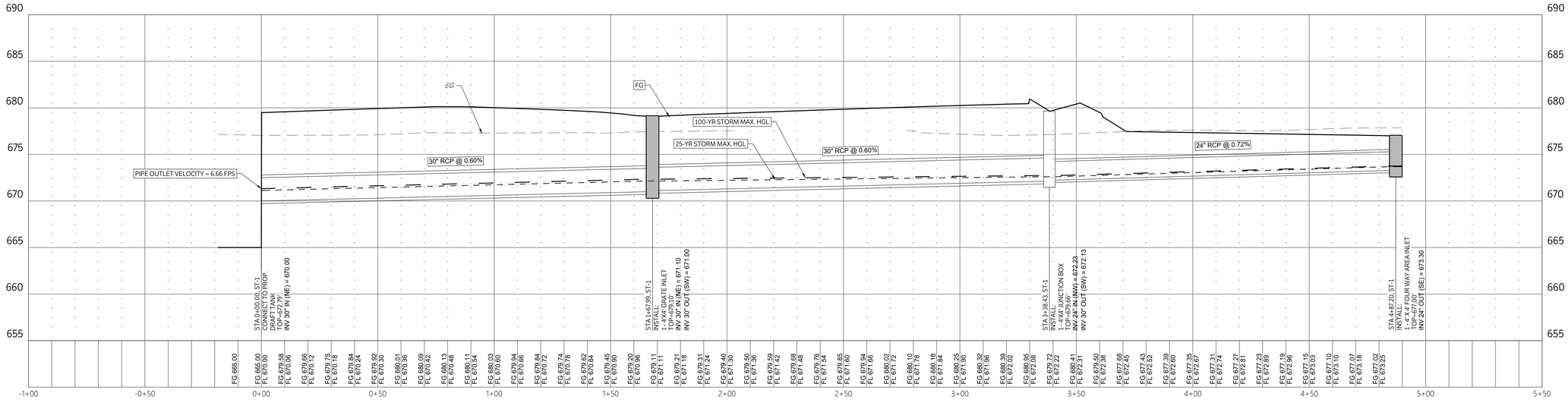
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353 FM 306
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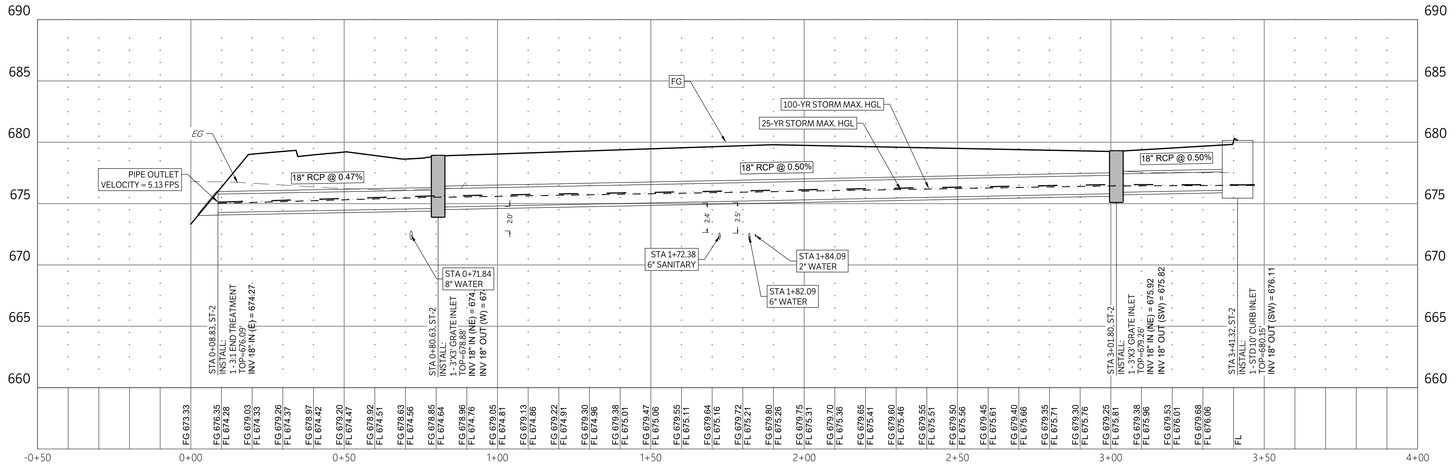
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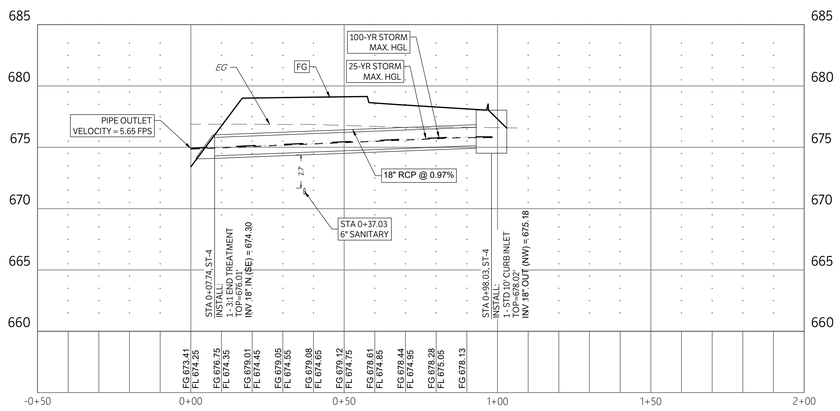
STORM SEWER PLAN ALTERNATES



ST-1
SCALE: 1"=20' H, 1"=5' V



ST-2
SCALE: 1"=20' H, 1"=5' V



ST-4
SCALE: 1"=20' H, 1"=5' V

STORM SEWER ALIGNMENTS ST-5 THROUGH ST-7 PLAN AND PROFILE DATA CAN BE FOUND ON FIRE STATION NO.7 STORM SEWER PLAN SHEETS

Alignment	Inlet Station	Inlet Type	Inlet Width (ft)	Inlet Length (ft)	QW (cfs)	Q100 (cfs)
ST-1	1+67.99	Grate	4	4	27.78	14.86
ST-1	5+19.45	Grate	4	4	27.78	3.12
ST-2	0+72.77	Grate	3	3	16.77	2.98
ST-2	2+92.96	Grate	3	3	16.77	2.78
ST-4	0+93.29	Curb	10	-	9.43	5.28
ST-5	1+49.24	Grate	3	3	16.77	0.91
ST-5	2+56.46	Grate	3	3	16.77	4.68
ST-6	0+42.97	Grate	2	2	7.79	1.74
ST-6	1+20.48	Grate	3	3	16.77	3.00
ST-7	0+47.71	Curb	10	-	9.43	3.00

Grate: QW = CW * P1.5 * h

Where:
QW = weir capacity of grate, cfs
CW = weir coefficient = 3 for English measurement
P = perimiter of grate, ft
h = allowable head on grate, ft = 0.5

Curb: Q = (L /(CW * d1.5)) - 1.6W

Where:
Q = capacity of curb inlet, cfs
L = inledt width, ft
CW = weir coefficient, ft^0.5/s = 3.0
d = head at inlet opening, ft = 0.5
W = gutter depression width = 0

Inlet Results

Element ID	Peak Flow	Peak Flow Intercepted by Inlet	Peak Flow Bypassing Inlet	Max Water Elev. During Peak Flow	Max Water Depth during Peak Flow	Time of Max Depth Occurrence
	(cfs)	(cfs)	(cfs)	(ft)	(ft)	(days hh:mm)
EX GRATE INLET 1	5.51	N/A	N/A	677.92	0.54	0 00:10
EX GRATE INLET 2	8.44	N/A	N/A	678.10	0.57	0 00:10
EX GRATE INLET 3	4.91	N/A	N/A	678.35	0.44	0 00:10
EX GRATE INLET 4	9.56	N/A	N/A	678.21	0.56	0 00:08
EX GRATE INLET 5	3.45	N/A	N/A	678.23	0.42	0 00:10
EX GRATE INLET 6	13.78	N/A	N/A	677.84	0.67	0 00:10
EX GRATE INLET 7	0.00	N/A	N/A	679.32	0.15	0 00:06
PROP JB 1	0.00	N/A	N/A	678.76	0.13	0 00:05
PROP JB 2	0.00	N/A	N/A	679.10	0.14	0 00:06
ST-1 STA 1+67.99 (4'x4')	11.29	N/A	N/A	679.71	0.61	0 00:10
ST-1 STA 5+19.45 (4'x4')	2.37	N/A	N/A	678.06	0.31	0 00:10
ST-2 STA 0+72.77 (3'x3')	2.26	1.89	0.38	678.87	0.27	0 00:10
ST-2 STA 2+92.96 (3'x3')	1.51	N/A	N/A	679.96	0.26	0 00:10
ST-2 STA 3+33.03 (10' CURB)	0.69	N/A	N/A	680.48	0.33	0 00:10
ST-4 STA 0+93.29 (10' CURB)	4.16	3.57	0.59	678.34	0.32	0 00:10
ST-5 STA 1+49.24 (3'x3')	3.54	N/A	N/A	677.72	0.37	0 00:09
ST-5 STA 2+56.45 (3'x3')	0.66	0.65	0.01	678.40	0.18	0 00:10
ST-6 STA 0+42.97 (2'x2')	1.34	N/A	N/A	678.51	0.26	0 00:10
ST-6 STA 1+20.48 (3'x3')	2.29	N/A	N/A	678.31	0.31	0 00:10
ST-7 STA 0+47.71 (10' CURB)	2.25	N/A	N/A	678.63	0.42	0 00:05

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JEREMY N. PETERS
100217
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
11/22

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www.gessnerengineering.com
FIRM REGISTRATION NUMBER: TBPE F-7451 | TBPLS F-10093910
GESSNER ENGINEERING

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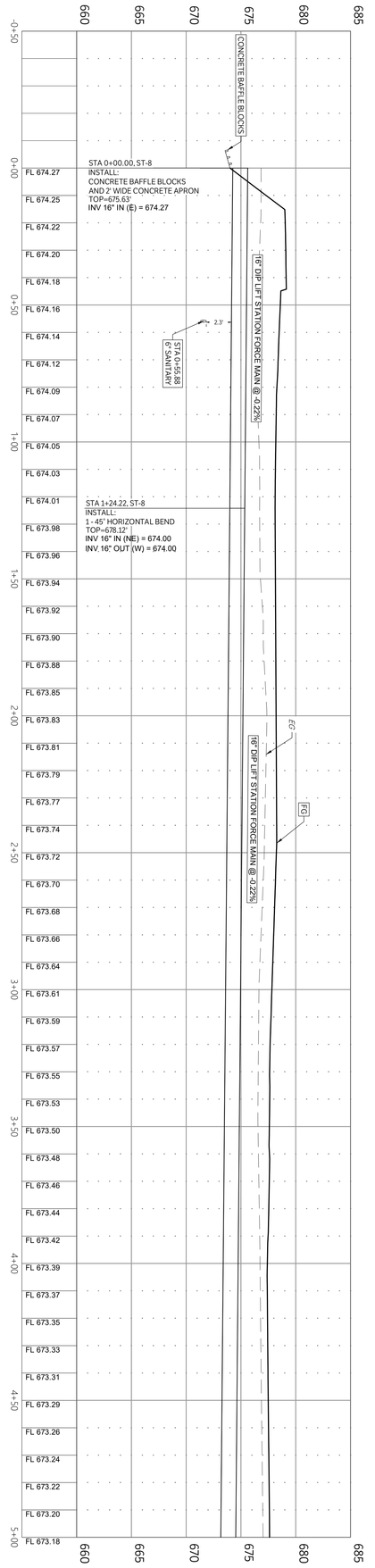
NEW BRAUNFELS FIRE TRAINING SITE INFRASTRUCTURE
353 FM 306
NEW BRAUNFELS, TX 78130

NO.	REVISION	DATE

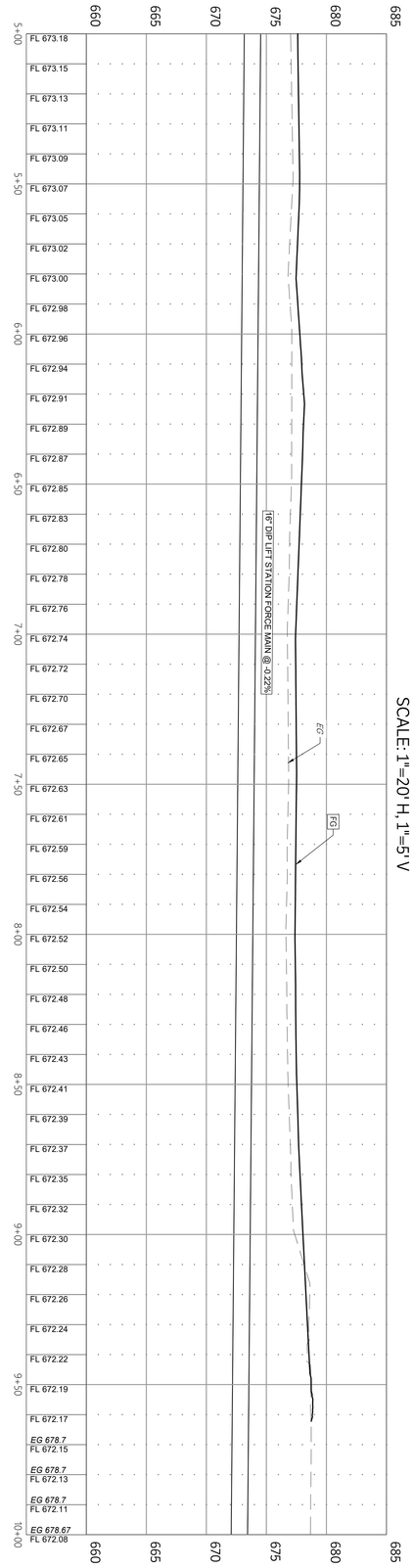
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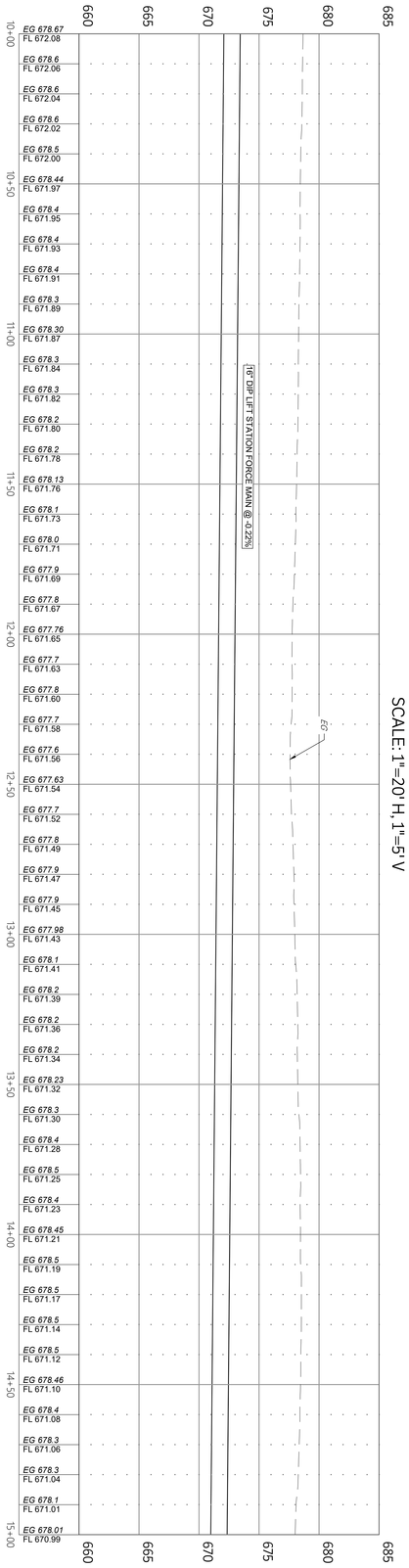
STORM SEWER PROFILES



ST-8
SCALE: 1"=20' H, 1"=5' V



ST-8
SCALE: 1"=20' H, 1"=5' V



ST-8
SCALE: 1"=20' H, 1"=5' V



ST-8
SCALE: 1"=20' H, 1"=5' V

100% CD

C5.4
DETENTION POND FORCE MAIN PROFILE

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353 FM 306
NEW BRAUNFELS, TX 78130

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BRENT N. PETERS
100217
STATE OF TEXAS
REGISTERED
11/1/22

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SUITE 400
COLLEGE STATION, TEXAS 77845
979.694.1701
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NOTES:

A) All utilities to be constructed prior to streets.
B) No valves, hydrants, cleanouts etc. shall be constructed within curbs, sidewalks, or driveways.
C) 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.
D) The Engineer of Record acknowledges that the point of delivery for and NBU wastewater system is the main side of the service lateral from the customer's clean out or property line whichever is nearer. The customer is responsible for the 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.
E) 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 contractor's implementation of these systems, programs and/or procedures shall provide for 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 a trench safety program in accordance with OSHA standards governing the presence and activities of individuals working in and around trench excavations.
F) In the event of service interruptions, the contractor is to provide a bypass pumping plan as to not create any service disruptions.

WASTEWATER SUMMARY TABLE

ELEMENT	SIZE	TOTAL
WYE (W/ 6" CLEAN OUT)	6"	1 EA
DOUBLE CLEAN OUT	6"	1 EA
SANITARY LINE (PVC)	8"	118 LF
SANITARY LINE (PVC)	6"	665 LF
SANITARY MANHOLE (PUBLIC)	4'	1 EA
SANITARY DOGHOUSE MANHOLE (PUBLIC)	4'	1 EA
SANITARY MANHOLE (PRIVATE)	4'	1 EA

CAUTION: CONTACT TEXAS 811 AND LOCAL UTILITY PROVIDERS TO LOCATE EXISTING UTILITIES PRIOR TO CONSTRUCTION.
CONTACT GESSNER ENGINEERING IF CONFLICTS OCCUR.

N

0 40 80 120
SCALE: 1"= 40'

PROJECT BENCHMARK:

BM1 BENCHMARK DESCRIPTION:
"X" CUT IN CONCRETE ON NORTH SIDE OF WINDGATE DRIVE NEAR INTERSECTION WITH F.M.306
ELEVATION = 676.19'

BM2 BENCHMARK DESCRIPTION:
"X" CUT IN CONCRETE
ELEVATION = 678.20'

HEATHER GLEN PHASE 3
DOC. NO. 201806043872
O.P.R.C.C.T.

S 3°40'03" E 742.28'

STA 0+00.00, SA-3
INSTALL:
1- DOGHOUSE MANHOLE (PUBLIC)
CONNECT EX. SAN SWR. MAIN
FIELD VERIFY ELEV. AND LOCATION.
TOP TO BE ADJUSTED TO FINISHED GRADE
FG = 677.32'
INV 8" IN (NE) = 667.00
INV 8" OUT (SE) = 666.88
INV 8" OUT (NW) = 666.98

STA 1+18.43, SA-1
INSTALL:
1- STD. 4' SAN. SWR. MANHOLE (PUBLIC)
BOLT AND GASKET LID
FG = 677.46'
INV 6" IN (NE) = 670.17
INV 8" OUT (SW) = 670.07

150.5 LF 8" SDR-26 PVC SEWER SERVICE (PUBLIC) @ 2.04%

356.2 LF 6" SEWER SERVICE (PRIVATE) @ 0.50%

PROP. BORE PIT LOCATION

79.1 LF 6" PVC PIPE @ 0.50%

55.6 LF 6" PVC SDR 35 @ 4.50%

4.0 LF 6" PVC SDR 35 @ 4.50%

193.5 LF 6" PVC @ -0.50%

STA 6+41.40, SA-3
INSTALL:
1 - 6" CLEANOUT
W/ 45° BEND
FG = 681.00'
INV 6" IN (N) = 674.95
INV 6" OUT (SW) = 674.95

STA 6+65.15, SA-3
INSTALL:
1 - 6" DOUBLE CLEANOUT
END 5' FROM BUILDING, REF. MEP FOR CONTINUATION AND FLOWLINE
FG = 676.54'
INV 6" OUT (SE) = 676.02

STA 5+85.76, SA-3
INSTALL:
1 - STD. 4' MANHOLE
FG = 681.09'
INV 6" IN (NE) = 672.45
INV 6" OUT (SE) = 672.35

STA 5+06.69, SA-3
INSTALL:
1 - 6" WYE
W/ 6" CLEANOUT
FG = 680.56'
INV 6" IN (NW) = 671.96
INV 6" OUT (SW) = 671.96
INV 6" OUT (NE) = 671.96

STA 1+93.54, SA-STUB
INSTALL:
1- STD. 4' SAN. SWR. MANHOLE (PRIVATE)
FG = 677.91'
INV 6" IN (SW) = 672.92

PROP. 15' P.U.E.
PROP. VARIABLE WIDTH P.U.E.
PROP. 30' P.U.E.
PROP. BURN TOWER FFE: 683' 1,466 SF
PROP. BURN TOWER FFE: 680.56' 1,304 SF
BUILDING #11 12,144 S.F. FFE: 682.50'
FIRE LANE

LEGEND

- EXISTING PAVEMENT
- EXISTING BUILDING
- PROPOSED BUILDING
- PROPOSED 4" CONCRETE SIDEWALK
- PROPOSED 6" CONCRETE PAVEMENT
- PROPOSED 8" CONCRETE PAVEMENT
- EXISTING PROPERTY LINE
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- W — EXISTING WATER LINE
- EXISTING FENCE CHAIN LINE
- G — EXISTING GAS LINE
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- SA — PROP. SANITARY SEWER
- BST — PROP. STORM SEWER
- W — PROP. WATER LINE
- G — PROP. GAS LINE
- FH — EX. / PROP. FIRE HYDRANT
- EX. / PROP. TREE
- EX. / PROP. SIGN
- LP — EX. / PROP. LIGHT POLE
- W — EX. / PROP. WATER METER
- ST — EX. / PROP. STORM SEWER MANHOLE
- SA — EX. / PROP. SANITARY SEWER MANHOLE
- PP — EXISTING POWER POLE
- EXISTING GUY WIRES
- EXISTING BOLLARD
- E — EXISTING ELECTRIC DUCT BANK
- MP — EXISTING MAIN PHASE
- CO — EXISTING CLEAN OUT
- EXISTING WATER VALVE TYP WV
- EXISTING WATER VALVE TYP ICV

100% CD

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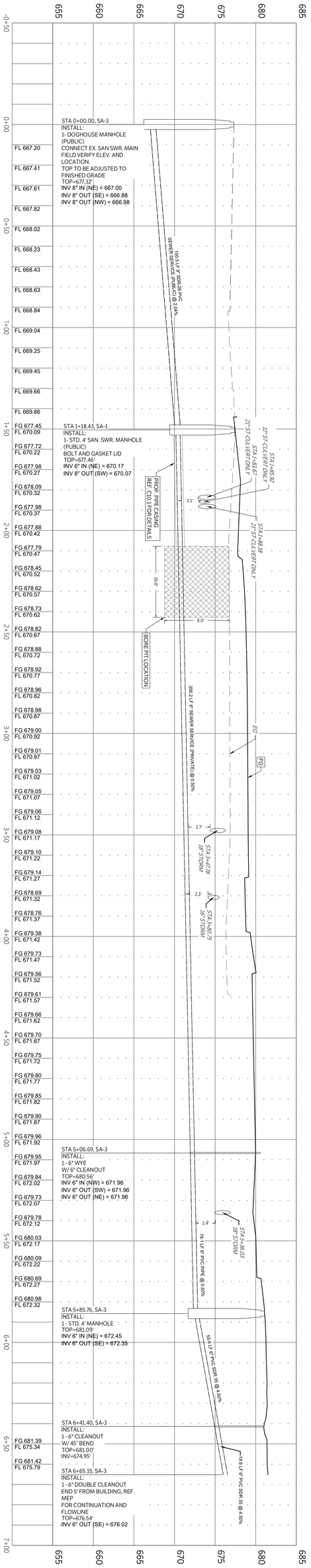
NEW BRAUNFELS
FIRE TRAINING SITE
INFRASTRUCTURE
353 FM 306
NEW BRAUNFELS, TX 78130

STATE OF TEXAS
JEREMY N. PETERS
100217
LICENSED PROFESSIONAL ENGINEER
11/01/22

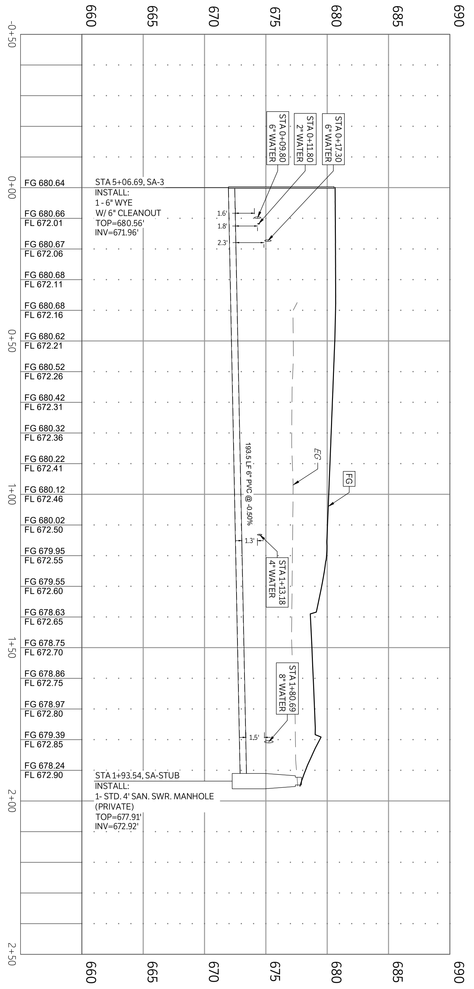
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SANITARY SEWER PLAN



SA-3
SCALE: 1"=20' H, 1"=5' V



SA-STUB
SCALE: 1"=20' H, 1"=5' V

100% CD

SANITARY SEWER PROFILE

C6.1

NO.	REVISION	DATE

City of New Braunfels

NEW BRAUNFELS FIRE TRAINING SITE INFRASTRUCTURE
353 FM 306
NEW BRAUNFELS, TX 78130

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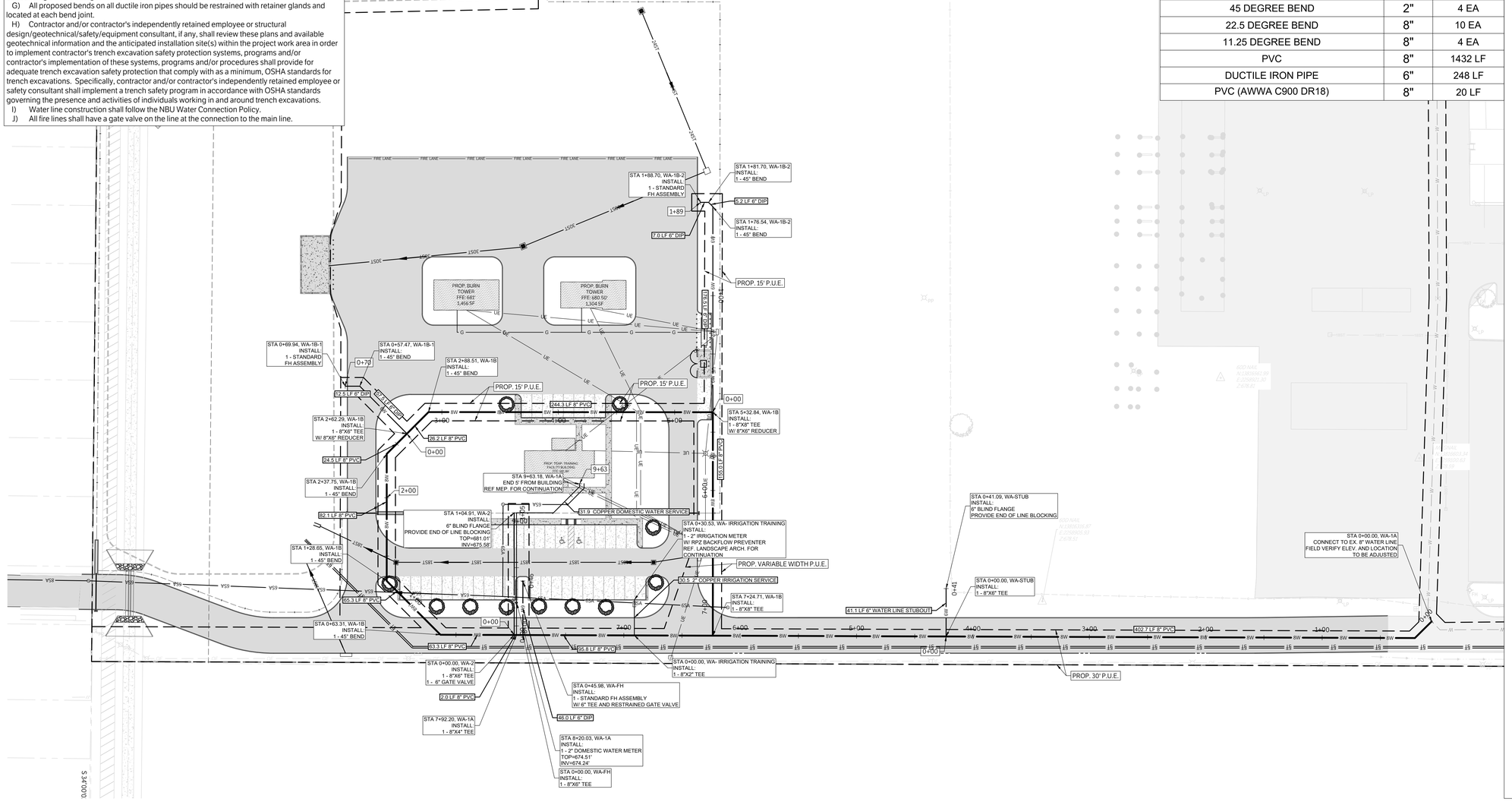


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CAUTION: CONTACT TEXAS 811 AND LOCAL UTILITY PROVIDERS TO LOCATE EXISTING UTILITIES PRIOR TO CONSTRUCTION.
CONTACT GESSNER ENGINEERING IF CONFLICTS OCCUR.

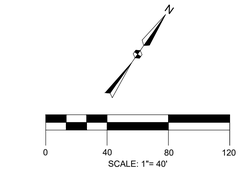
NOTES:

A) All utilities to be constructed prior to streets.
B) No valves, hydrants, cleanouts etc. shall be constructed within curbs, sidewalks, or driveways.
C) 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.
D) 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 NBU's 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.
E) The Engineer of Record acknowledges that the point of delivery for an NBU 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.
F) The contractor is required to notify NBU seven days prior to any planned outage and any surrounding service outages for tie-in installation are to be no more than 6-hours.
G) All proposed bends on all ductile iron pipes should be restrained with retainer glands and located at each bend joint.
H) 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 contractor's implementation of these systems, programs and/or procedures shall provide for 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 a trench safety program in accordance with OSHA standards governing the presence and activities of individuals working in and around trench excavations.
I) Water line construction shall follow the NBU Water Connection Policy.
J) All fire lines shall have a gate valve on the line at the connection to the main line.



WATER AND SEWER SUMMARY TABLE

ELEMENT	SIZE	TOTAL
CONNECTION TO EX. 8"	8"	1 EA
TEE	8"X6"	5 EA
TEE	8"X8"	1 EA
TEE	8"X2"	1 EA
TEE	8"X4"	1 EA
WATER LINE STUBOUT (DUCTILE IRON)	6"	41 LF
BLIND FLANGE	6"	1 EA
IRRIGATION LINE (COPPER TYPE K)	2"	31 LF
IRRIGATION METER W/ BFP	2"	1 EA
FIRE HYDRANT ASSEMBLY (W/ GATE VALVE)	6"	3 EA
WATER METER	2"	1 EA
FIRE SUPPRESSION LINE (DUCTILE IRON)	6"	120 LF
45 DEGREE BEND	8"	5 EA
45 DEGREE BEND	6"	7 EA
45 DEGREE BEND	2"	4 EA
22.5 DEGREE BEND	8"	10 EA
11.25 DEGREE BEND	8"	4 EA
PVC	8"	1432 LF
DUCTILE IRON PIPE	6"	248 LF
PVC (AWWA C900 DR18)	8"	20 LF



PROJECT BENCHMARK:

BM1 BENCHMARK DESCRIPTION:
"X" CUT IN CONCRETE ON NORTH SIDE OF WINDGATE DRIVE NEAR INTERSECTION WITH FM 306
ELEVATION = 676.19'

BM2 BENCHMARK DESCRIPTION:
"X" CUT IN CONCRETE
ELEVATION = 678.20'

LEGEND

- EXISTING PAVEMENT
- EXISTING BUILDING
- PROPOSED BUILDING
- PROPOSED 4" CONCRETE SIDEWALK
- PROPOSED 6" CONCRETE PAVEMENT
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- EXISTING WATER VALVE TYP WV
- EXISTING WATER VALVE TYP ICV

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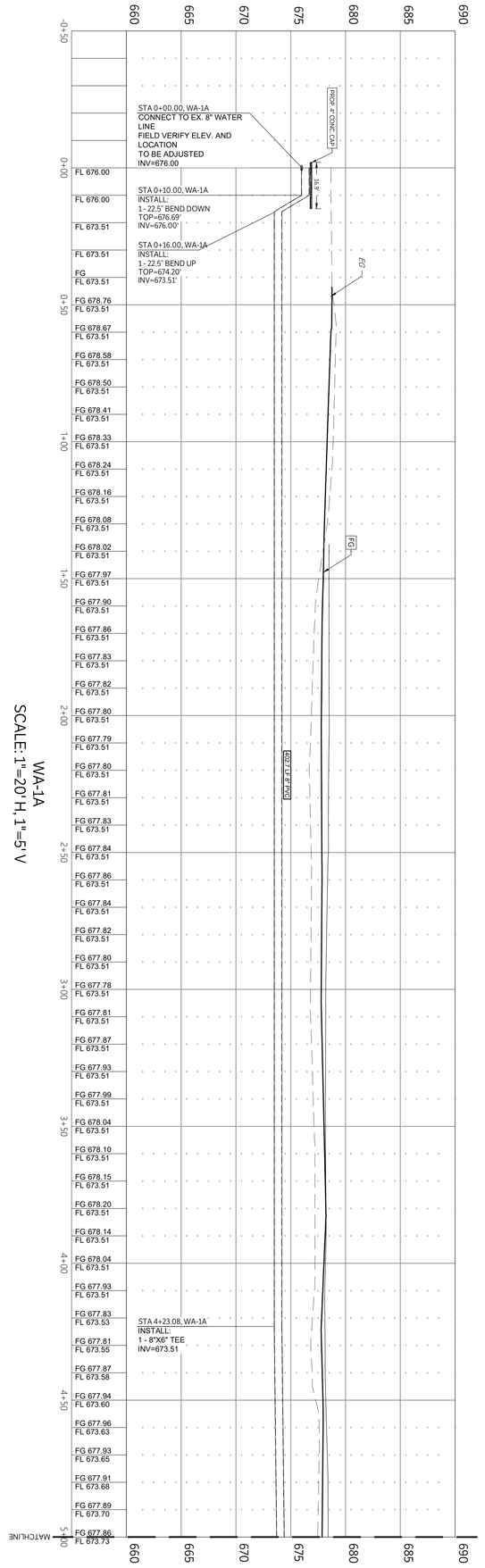
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353 FM 306
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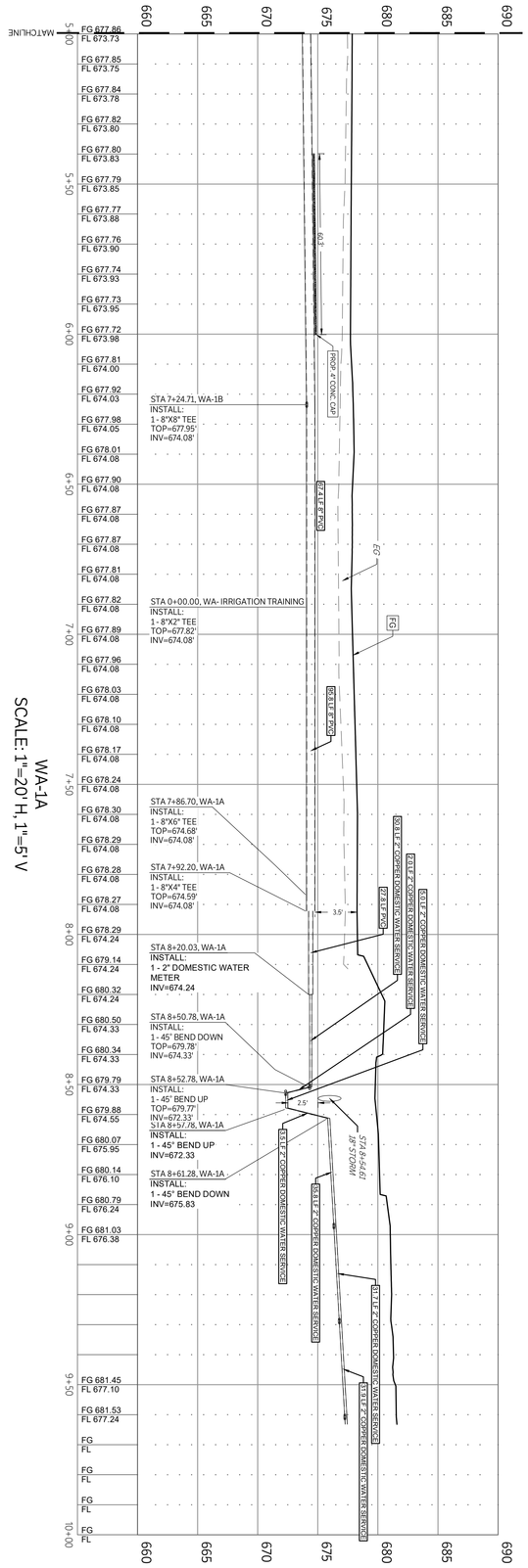
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C7.0

WATER PLAN



WA-1A
SCALE: 1"=20' H, 1"=5' V



WA-1A
SCALE: 1"=20' H, 1"=5' V



WA-2
SCALE: 1"=20' H, 1"=5' V

100% CD

WATER PROFILE

C7.1

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353 FM 306
NEW BRAUNFELS, TX 78130

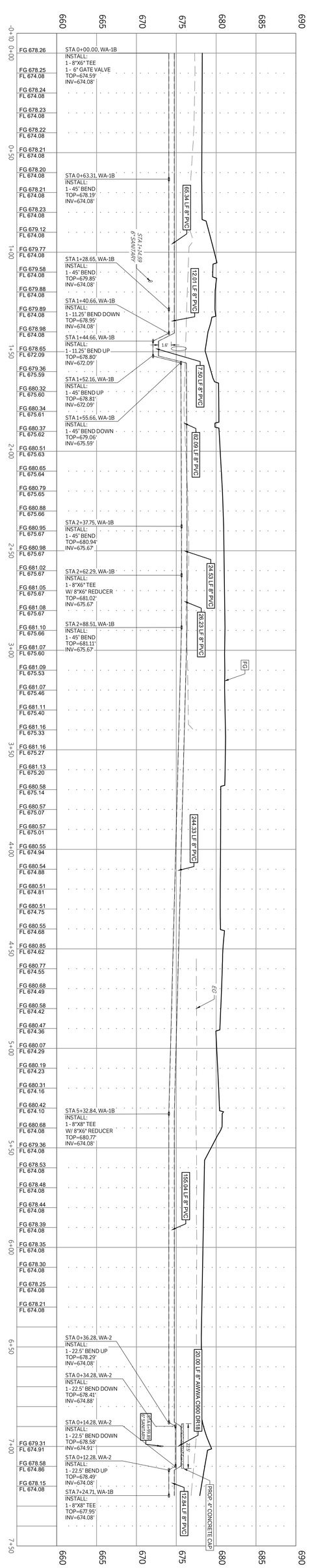
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COLLEGE STATION, TEXAS 77845
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WA-1B
SCALE: 1"=20' H, 1"=5' V

100% CD

WATER PROFILE

C7.2

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Corporate Office
2501 Ashford Drive
College Station, Texas 77840
www.gessnerengineering.com
FIRM REGISTRATION NUMBER: TBPE F-7451, TBPLSF-10193910

JEREMY N. PETERS 100217 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS

BROWN REYNOLDS WATFORD
ARCHITECTS
2700 EARL RUDDER FRWY SOUTH
SUITE 4000
COLLEGE STATION, TEXAS 77845
979.694.1781
WWW.BRWARCH.COM

FUTURE ESCALANTE APARTMENT
PHASE 1 DETENTION POND A.

DETENTION TRAVERSE PIPES
1 - 2'X5' BOX CULVERT
FL_{IN} = 675.04'
FL_{OUT} = 674.92'

LIMITS OF ESCALANTE APTS, PHASE 1 OUTFALL CHANNEL. CONNECT TO OUTFALLCHANNEL AND EXPAND REGIONAL DETENTION

EXISTING 100' WIDE DRAINAGE EASEMENT

INSTALL 2' THICK CLAY CAP
95% COMPACTED
60 LIQUID LIMIT
35 PLASTICITY INDEX
>50% CLAY CONTENT

GRADE TO DRAIN

CONRETE FLUME TO BE CONSTRUCTED BY OTHERS. REFERENCE ESCALANTE APARTMENT PLANS FOR FLUME DETAILS

PROPOSED REGIONAL RETENTION POND EXPANSION

DETENTION OUTLET STRUCTURE
Q_{100} = 51.12 CFS
AREA= 56.52ACRES
(REF. ESCALANTE APARTMENTS CONSTRUCTION PLANS)

EMERGENCY SPILLWAY GRASSED WIDTH = 100'
TOP OF WEIR = 678.09

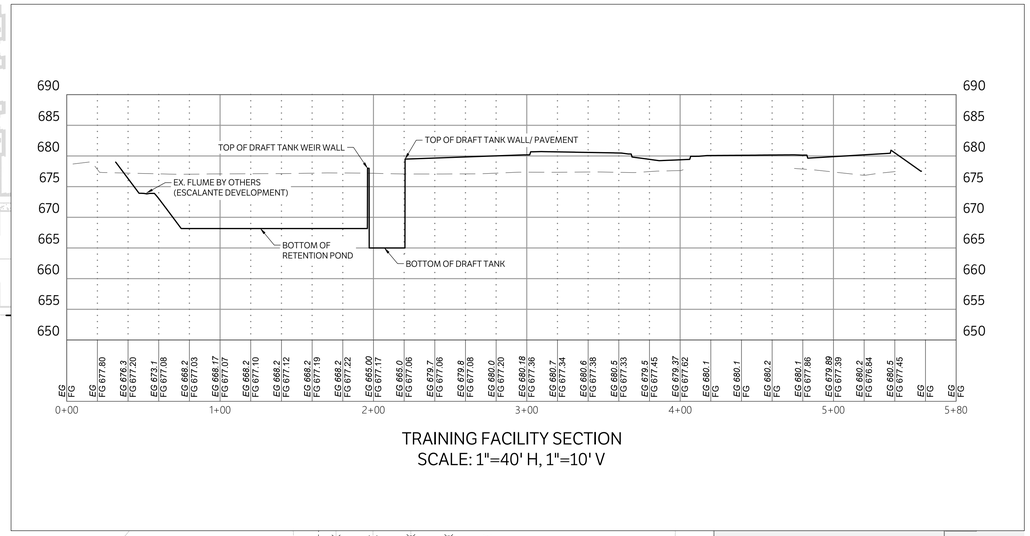
PROP. BURN TOWER
FFE: 680'
1,466 SF

PROP. BURN TOWER
FFE: 680.50'
1,304 SF

PROP. TEAM TRAINING FACILITY BUILDING
FFE: 681.65'

S 34°27'42" E 1281.28'

S 34°00'03" E 241.28'



TRAINING FACILITY SECTION
SCALE: 1"=40' H, 1"=10' V

"X" CUT
N:13816869.87
E:2768785.52
Z:678.28

60D NAIL
N:13816561.99
E:2768971.30
Z:678.81

MAGNAIL
N:13816603.34
E:2769100.63
Z:678.59

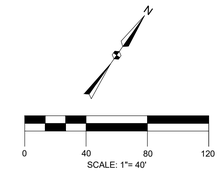
60D NAIL
N:13815316.87
E:2768955.93
Z:678.51

HADLOCK PL
DOC. NO. 201406
O.P.R.C.C.

LOT 3

BLOCK 1

CAUTION: CONTACT TEXAS 811 AND LOCAL UTILITY PROVIDERS TO LOCATE EXISTING UTILITIES PRIOR TO CONSTRUCTION.
CONTACT GESSNER ENGINEERING IF CONFLICTS OCCUR.



PROJECT BENCHMARK:

BM1 BENCHMARK DESCRIPTION:
"X" CUT IN CONCRETE ON NORTH SIDE OF WINDGATE DRIVE NEAR INTERSECTION WITH F.M.306
ELEVATION = 676.19'

BM2 BENCHMARK DESCRIPTION:
"X" CUT IN CONCRETE
ELEVATION = 678.20'

LEGEND

340	EXISTING CONTOURS
340	PROPOSED CONTOURS
	PROPERTY LINE
	PROPOSED SWALE WITH DIRECTION OF FLOW ARROWS
	PROPOSED RETAINING WALL
BR	PROPOSED FINISHED GRADE AT BOTTOM OF RAMP
BS	PROPOSED FINISHED GRADE AT BOTTOM OF STAIR
BW	PROPOSED FINISHED GRADE AT BASE OF WALL
FG	PROPOSED FINISHED GRADE ELEVATION
FL	PROPOSED FLOWLINE ELEVATION
G	PROPOSED GUTTER FLOWLINE ELEVATION
GB	PROPOSED GRADE BREAK
JB	PROPOSED TOP OF JUNCTION BOX ELEVATION
ME @ SW	MATCH EXISTING SIDEWALK ELEVATION***
ME @ TC	MATCH EXISTING TOP OF CURB ELEVATION***
ME @ TP	MATCH EXISTING AT TOP OF PAVEMENT ELEVATION***
SW	PROPOSED TOP OF PAVEMENT AT SIDEWALK ELEVATION
TC	PROPOSED TOP OF CURB ELEVATION
TG	PROPOSED TOP OF GRATE ELEVATION
TP	PROPOSED TOP OF PAVEMENT ELEVATION
TR	PROPOSED TOP OF RAMP ELEVATION
TW	PROPOSED TOP OF WALL ELEVATION
CC	PROPOSED TOP OF PAVEMENT AT CURB CUT

***CONTACT GESSNER ENGINEERING WITH ANY DISCREPANCIES BETWEEN THE ME ELEVATION CALLED OUT ON THE PLANS AND FIELD CONDITIONS

BROWN REYNOLDS WATFORD ARCHITECTS
2155 E.BAR., BUCKNER PKWY SOUTH, SUITE 400, ABILENE, TEXAS 79606
915.698.2700 | 915.698.2701 FAX
BRWARCHITECTS.COM

STATE OF TEXAS
JEREMY N. PETERS
100217
LICENSED PROFESSIONAL ENGINEER
11/01/22

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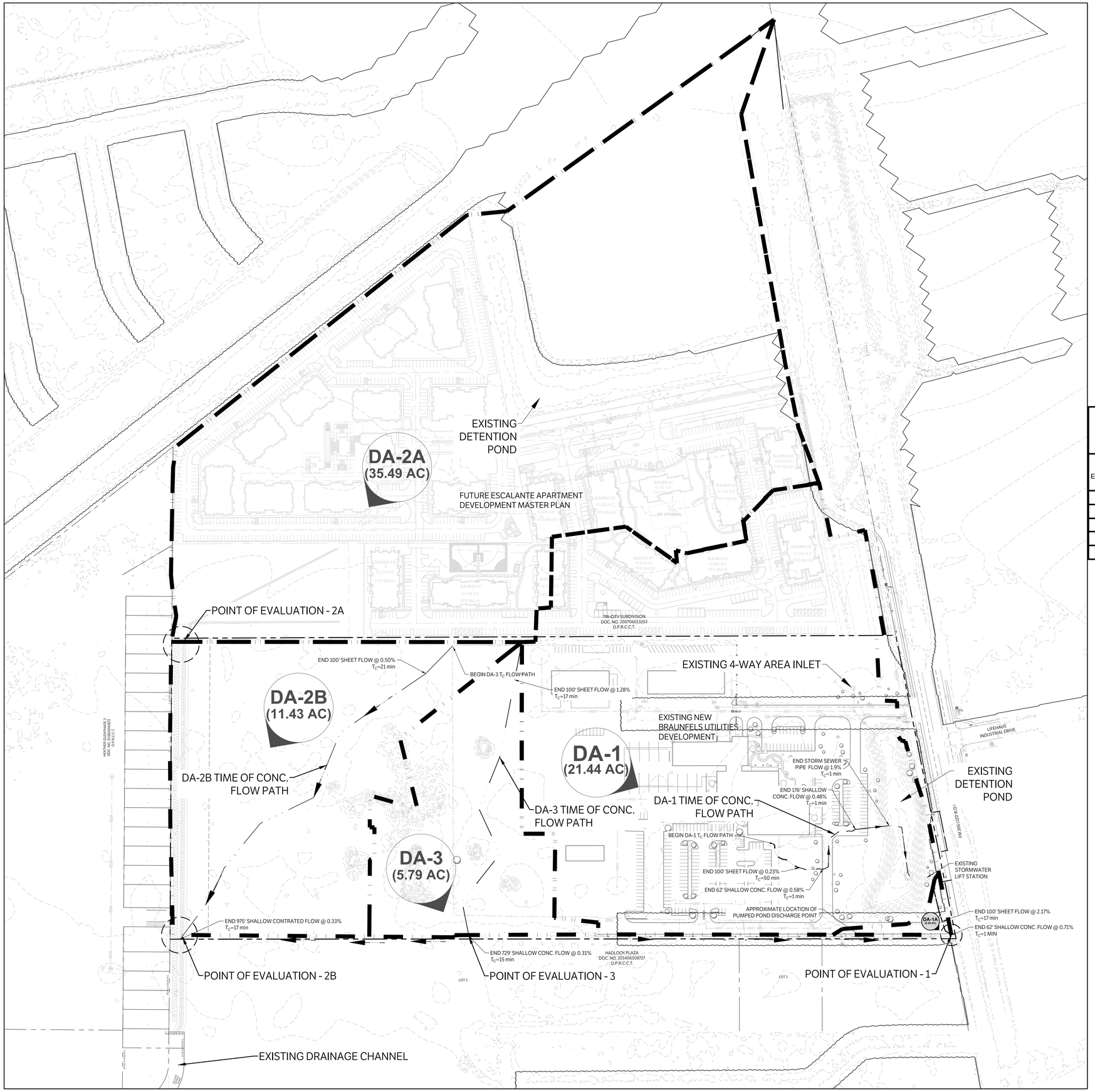
NEW BRAUNFELS FIRE TRAINING SITE INFRASTRUCTURE
353 FM 306
NEW BRAUNFELS, TX 78130

NO.	REVISION	DATE

100% CD

C8.0

GRADING AND DRAINAGE PLAN



CAUTION: CONTACT TEXAS 811 AND LOCAL UTILITY PROVIDERS TO LOCATE EXISTING UTILITIES PRIOR TO CONSTRUCTION.
CONTACT GESSNER ENGINEERING IF CONFLICTS OCCUR.

N

0 100 200 300
SCALE: 1"= 100'

PROJECT BENCHMARK:

- BM1 BENCHMARK DESCRIPTION: "X" CUT IN CONCRETE ON NORTH SIDE OF WINDGATE DRIVE NEAR INTERSECTION WITH FM 306 ELEVATION = 676.19'
- BM2 BENCHMARK DESCRIPTION: "X" CUT IN CONCRETE ELEVATION = 678.20'

LEGEND

- DRAINAGE AREA BOUNDARY
- A1 (XX.XX) AC — DRAINAGE AREA LABEL, AREA, AND FLOW DIRECTION
- PROPERTY LINE
- 340 — EXISTING CONTOURS
- (340) — PROPOSED CONTOURS (MAJOR)

NEW BRAUNFELS FIRE STATION NO. 7 - PREDEVELOPED HYDROLOGIC CALCULATIONS (SCS/NRCS)

POINT OF EVALUATION	DRAINAGE AREA	TOTAL AREA (AC)	CN	Tc (min)	Q_2 (cfs)	Q_{10} (cfs)	Q_{25} (cfs)	Q_{100} (cfs)
POE-1	DA-1	21.44	89	53	13.40	13.40	13.40	13.40
POE-1	DA-1A	0.29	86	14	0.68	1.54	2.16	3.45
*POE-2A	*DA-2A	*39.3	*88	*90	*21.6	*47.6	*62.7	*81.6
POE-2B	DA-2B	11.43	84	46	12.82	31.12	69.26	72.27
POE-3	DA-3	5.79	84	32	8.30	20.40	28.56	46.32

* DATA AND CALCULATIONS FOR POE-2A WAS UTILIZED FROM THE ESCALANTE APARTMENTS PERMITTED PLAN SET DATED 6/5/2020- SHEET 14 DRAINAGE AREA MAP

NOTES:

1. DRAINAGE ANALYSIS COMPLIES WITH THE CITY OF NEW BRAUNFELS DRIANAGE AND EROSION CONTROL DESIGN MANUAL (2018).
2. SOILS IN THE AREA OF ANALYSIS HAVE BEEN DETERMINED TO BE HYDROLOGIC GROUP D (NRCS WEB SOIL SURVEY).

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11/22

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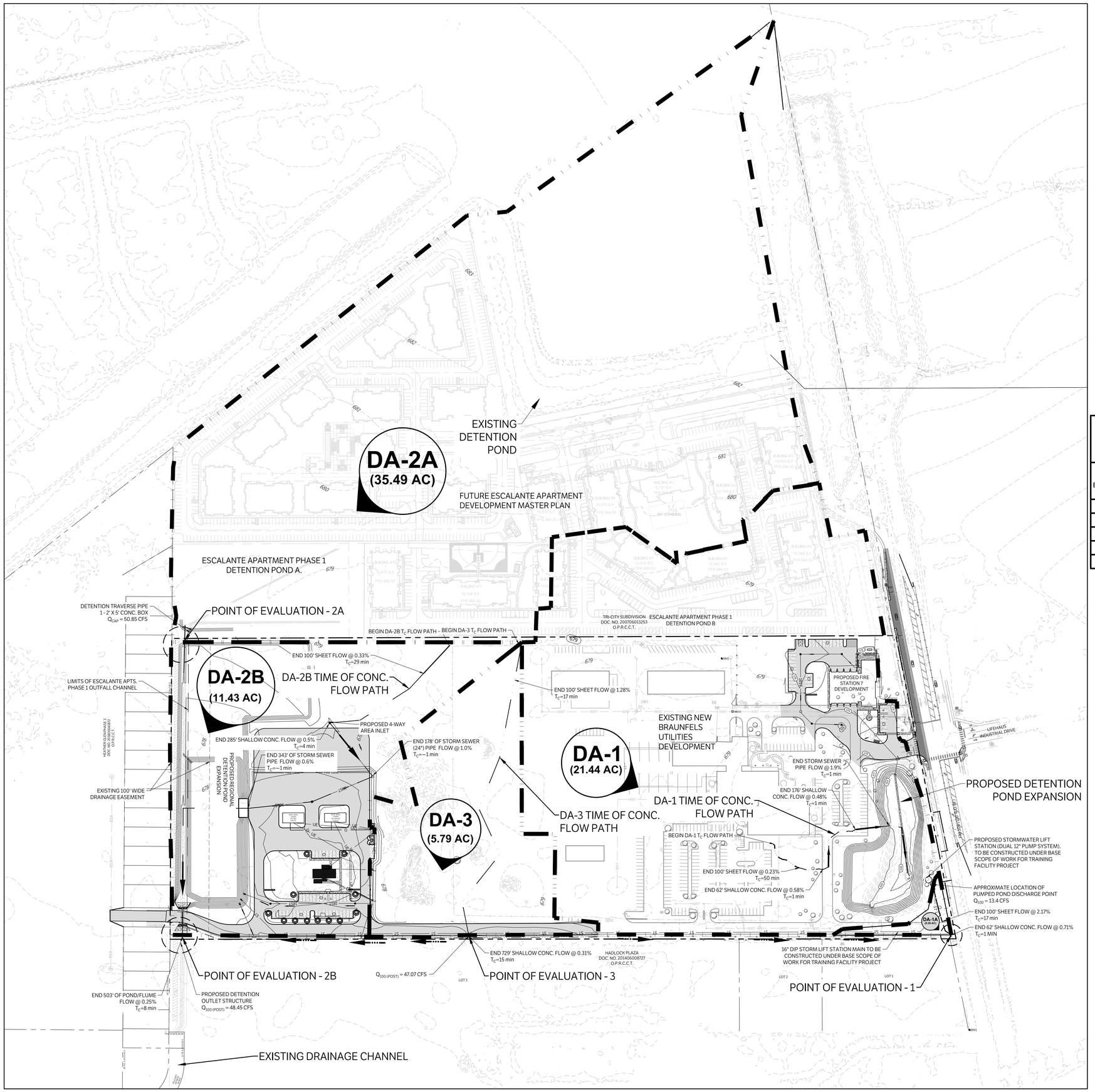
NEW BRAUNFELS FIRE TRAINING SITE INFRASTRUCTURE
353 FM 306
NEW BRAUNFELS, TX 78130

NO.	REVISION	DATE

100% CD

C9.0

PREDEVELOPED DRAINAGE AREA MAP



CAUTION: CONTACT TEXAS 811 AND LOCAL UTILITY PROVIDERS TO LOCATE EXISTING UTILITIES PRIOR TO CONSTRUCTION.
CONTACT GESSNER ENGINEERING IF CONFLICTS OCCUR.

N

0 100 200 300
SCALE: 1"= 100'

PROJECT BENCHMARK:

BM1 BENCHMARK DESCRIPTION:
"X" CUT IN CONCRETE ON NORTH SIDE OF WINDGATE DRIVE NEAR INTERSECTION WITH FM 306
ELEVATION = 676.19'

BM2 BENCHMARK DESCRIPTION:
"X" CUT IN CONCRETE
ELEVATION = 678.20'

LEGEND

- DRAINAGE AREA BOUNDARY
- A1 (XX.XX) AC — DRAINAGE AREA LABEL, AREA, AND FLOW DIRECTION
- PROPERTY LINE
- 340 — EXISTING CONTOURS
- (340) — PROPOSED CONTOURS (MAJOR)

NEW BRAUNFELS FIRE STATION NO. 7 - POST-DEVELOPED HYDROLOGIC CALCULATIONS (SCS/NRCS)

POINT OF EVALUATION	DRAINAGE AREA	TOTAL AREA (AC)	CN	Tc (min)	Q_2 (cfs)	Q_{10} (cfs)	Q_{25} (cfs)	Q_{100} (cfs)
	DA-1	21.44	91	53	28.45	60.17	85.29	129.11
POE-1	DA-1A	0.29	86	14	0.68	1.54	2.16	3.45
*POE-2A	*DA-2A	*39.3	*88	*90	*21.6	*47.6	*62.7	*81.6
POE-2B	DA-2B	11.43	92	42	19.90	30.84	36.46	46.76
POE-3	DA-3	5.79	86	32	8.30	20.40	28.56	46.32

* DATA AND CALCULATIONS FOR POE-2A WAS UTILIZED FROM THE ESCALANTE APARTMENTS PERMITTED PLAN SET DATED 6/5/2020- SHEET 14 DRAINAGE AREA MAP

NOTES:

1. DRAINAGE ANALYSIS COMPLIES WITH THE CITY OF NEW BRAUNFELS DRIANAGE AND EROSION CONTROL DESIGN MANUAL (2018).
2. SOILS IN THE AREA OF ANALYSIS HAVE BEEN DETERMINED TO BE HYDROLOGIC GROUP D (NRCS WEB SOIL SURVEY).

REGIONAL DETENTION POND STORAGE

ELEVATION	DEPTH	AREA	VOLUME	CUMULATIVE VOLUME	CUMULATIVE VOLUME
(ft)	(ft)	(ft2)	(ft3)	(ft3)	(ac-ft)
673.17	0.00	0	0	0	0
674.00	.83	78,931	21,838	21,838	0.50
675.00	1.83	253,852	158,111	179,949	4.13
676.00	2.83	286,962	270,238	450,187	10.33
677.00	3.83	304,688	295,781	745,968	17.13
678.00	4.83	316,741	310,695	1,056,663	24.26
679.00	5.83	328,076	322,392	1,379,055	31.66

BROWN REYNOLDS WATFORD ARCHITECTS
2155 E.BIG BUCKEYE PKWY SOUTH, SUITE 400, CANYON LAKE, TEXAS 77625
830.964.3700 | BRWARCHITECTS.COM

STATE OF TEXAS
JEREMY N. PETERS
100217
LICENSED PROFESSIONAL ENGINEER
11/22

GESSNER ENGINEERING
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College Station, Texas 77840
www.gessnerengineering.com

FIRM REGISTRATION NUMBER: TBPE F-7-451, TBPLS F-10053910

GESSNER ENGINEERING

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NEW BRAUNFELS FIRE TRAINING SITE INFRASTRUCTURE
353 FM 306
NEW BRAUNFELS, TX 78130

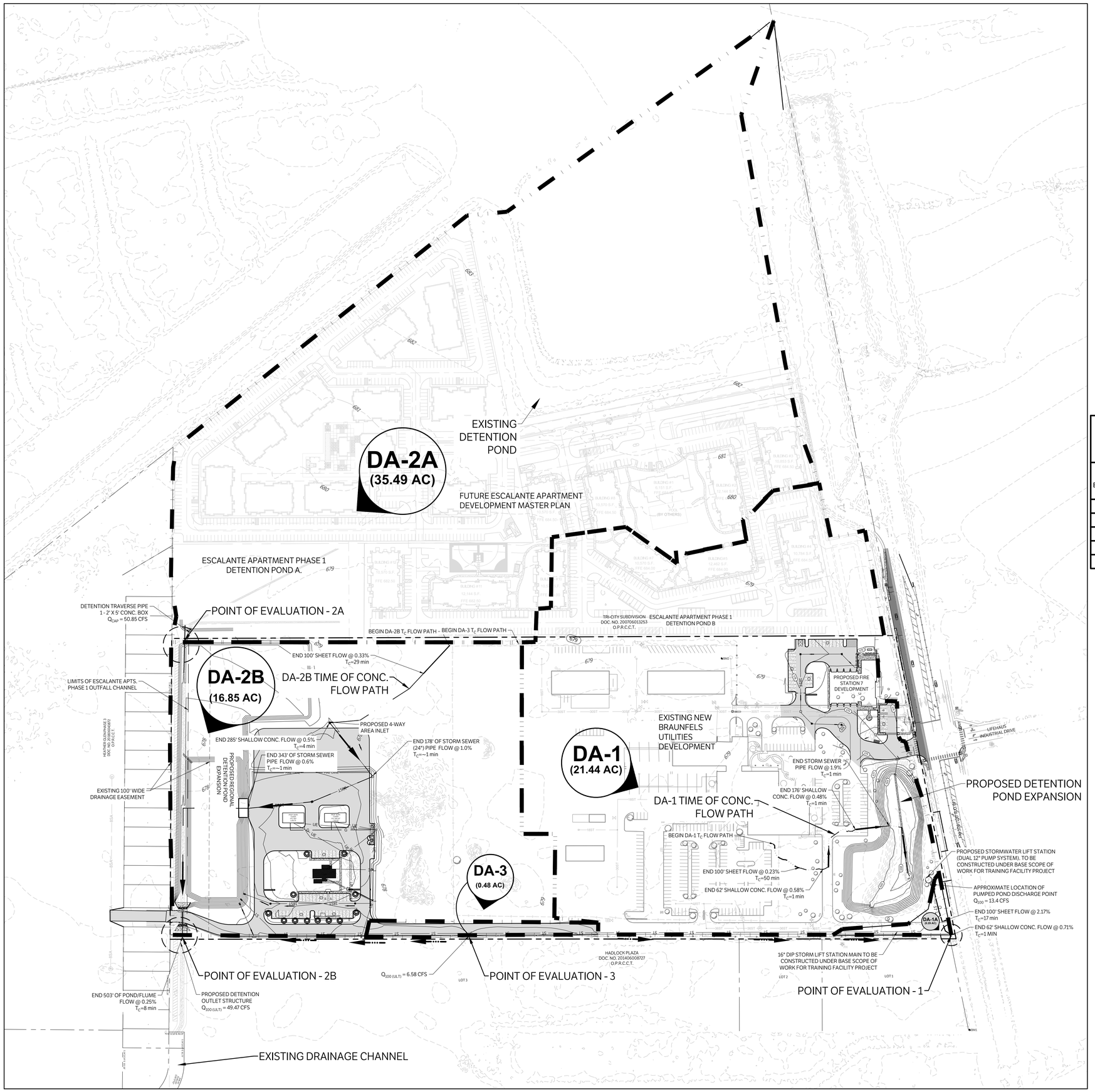
City of New Braunfels

NO.	REVISION	DATE

100% CD

C9.1

POST DEVELOPED DRAINAGE AREA MAP



CAUTION: CONTACT TEXAS 811 AND LOCAL UTILITY PROVIDERS TO LOCATE EXISTING UTILITIES PRIOR TO CONSTRUCTION.
CONTACT GESSNER ENGINEERING IF CONFLICTS OCCUR.

N

0 100 200 300
SCALE: 1"= 100'

PROJECT BENCHMARK:

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ELEVATION = 676.19'

BM2 BENCHMARK DESCRIPTION: "X" CUT IN CONCRETE
ELEVATION = 678.20'

LEGEND

- DRAINAGE AREA BOUNDARY
- A1 (XX.XX) AC — DRAINAGE AREA LABEL, AREA, AND FLOW DIRECTION
- PROPERTY LINE
- 340 — EXISTING CONTOURS
- (340) — PROPOSED CONTOURS (MAJOR)

NEW BRAUNFELS FIRE STATION NO. 7 - ULTIMATE-DEVELOPED HYDROLOGIC CALCULATIONS (SCS/NRCS)

POINT OF EVALUATION	DRAINAGE AREA	TOTAL AREA (AC)	CN	Tc (min)	Q_2 (cfs)	Q_{10} (cfs)	Q_{25} (cfs)	Q_{100} (cfs)
	DA-1	21.44	91	53	28.45	60.17	85.29	129.11
POE-1	DA-1A	0.29	86	14	0.68	1.54	2.16	3.45
*POE-2A	*DA-2A	*39.3	*88	*90	*21.6	*47.6	*62.7	*81.6
POE-2B	DA-2B	16.85	92	42	20.34	32.40	38.47	49.47
POE-3	DA-3	0.48	98	10	1.74	3.25	4.33	6.58

* DATA AND CALCULATIONS FOR POE-2A WAS UTILIZED FROM THE ESCALANTE APARTMENTS PERMITTED PLAN SET DATED 6/5/2020- SHEET 14 DRAINAGE AREA MAP

NOTES:

1. DRAINAGE ANALYSIS COMPLIES WITH THE CITY OF NEW BRAUNFELS DRIANAGE AND EROSION CONTROL DESIGN MANUAL (2018).
2. SOILS IN THE AREA OF ANALYSIS HAVE BEEN DETERMINED TO BE HYDROLOGIC GROUP D (NRCS WEB SOIL SURVEY).

REGIONAL DETENTION POND STORAGE					
ELEVATION	DEPTH	AREA	VOLUME	CUMULATIVE VOLUME	CUMULATIVE VOLUME
(ft)	(ft)	(ft2)	(ft3)	(ft3)	(ac-ft)
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674.00	.83	78,931	21,838	21,838	0.50
675.00	1.83	253,852	158,111	179,949	4.13
676.00	2.83	286,962	270,238	450,187	10.33
677.00	3.83	304,688	295,781	745,968	17.13
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NEW BRAUNFELS FIRE STATION No. 7
353 & 357 FM 306
NEW BRAUNFELS, TX 78130

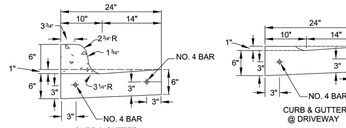
NO.	REVISION	DATE

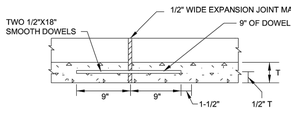
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C9.2

ULTIMATE DEVELOPED DRAINAGE AREA MAP

CURB AND GUTTER





LONGITUDINAL SECTION THRU CURB AND GUTTER
SHOWING TYPICAL EXPANSION JOINT DETAILS.
REINFORCING STEEL SHALL NOT CROSS EXPANSION JOINTS.
STEEL SHALL BE TERMINATED 3" (+ OR -) 1" FROM FACE OF THE JOINT.

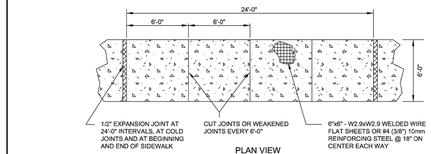
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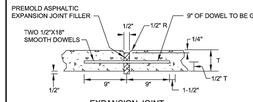
1. REINFORCING BARS SHALL BE LAPPED A MINIMUM OF 18".
2. CURB AND GUTTER SHALL HAVE FORMED TOOLED OR SAWED CONTRACTION JOINTS AT ± 10'. THE DEPTH OF THESE JOINTS SHALL BE SUFFICIENT TO ENSURE CRACKING AT THE JOINTS.
3. CURB OR CURB AND GUTTER SHALL HAVE EXPANSION JOINTS AT POINTS OF CURVATURE, AT INTERVALS NO GREATER THAN 100' AND AT ALL ADJACENT STRUCTURES.
4. UNLESS OTHERWISE SHOWN, TRANSITIONS BETWEEN CURBS OR CURBS AND GUTTER OF DIFFERING CROSS SECTION SHALL BE ACCOMPLISHED OVER A 10' LENGTH OR AS APPROVED BY THE CITY ENGINEER.
5. ALL CONCRETE TO BE CLASS "A" 3000 PSI CONCRETE.
6. ALL EXPOSED CONCRETE SURFACES TO BE BRUSHED SMOOTH AND UNIFORM.

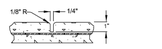
DATE APPROVED: 07/2008	DWG. NO: ST-013	SCALE: N.T.S.
DRAWN BY: RAS	SHEET: 1 OF 1	
FILENAME: CURB & GUTTER		

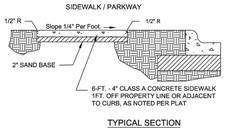
City of New Braunfels ENGINEERING DEPARTMENT

SIDEWALK
(COMMERCIAL - INDUSTRIAL)







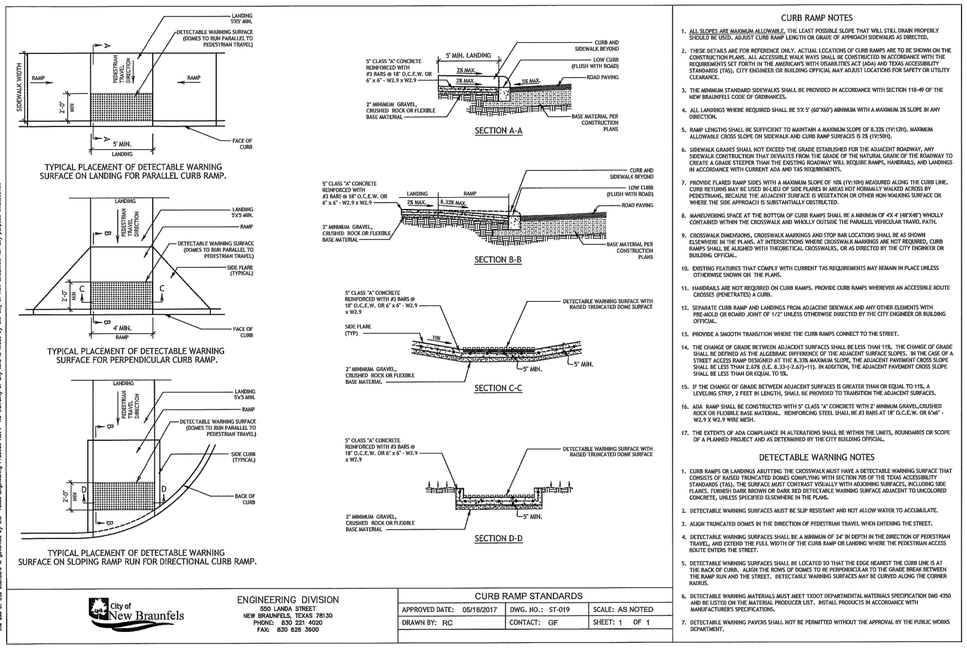


NOTES:

1. EXPANSION JOINTS ARE TO BE USED BETWEEN CONCRETE DRIVEWAY AND SIDEWALK.
2. SCORED JOINTS DENOTE SIDEWALK ACROSS THE DRIVEWAY AND ARE TO BE PLACED AT LEAST 1/3 rd. THROUGH THE SLAB THICKNESS.
3. ALL SIDEWALK AND DRIVEWAY CONSTRUCTION SHALL MEET A.D.A. SPECIFICATIONS.

DATE APPROVED: 07/2008	DWG. NO: ST-017	SCALE: N.T.S.
DRAWN BY: RAS	SHEET: 1 OF 1	
FILENAME: SIDEWALK (COMMERCIAL - INDUSTRIAL)		

City of New Braunfels ENGINEERING DEPARTMENT



CURB RAMP NOTES

1. ALL SLOPES ARE MAXIMUM ALLOWABLE. THE LEAST POSSIBLE SLOPE THAT WILL STILL DRAIN PROPERLY SHOULD BE USED. ADJUST CURB RAMP LENGTH OR GRADE OF APPROACH SIDEWALKS AS DIRECTED.
2. THESE DETAILS ARE FOR REFERENCE ONLY. ACTUAL LOCATIONS OF CURB RAMPS ARE TO BE SHOWN ON THE CONSTRUCTION PLANS. ALL ACCESSIBLE WALK WAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS SET FORTH IN THE AMERICANS WITH DISABILITIES ACT (ADA) AND TEXAS ACCESSIBILITY STANDARDS (TAS). CITY ENGINEER OR BUILDING OFFICIAL MAY ADJUST LOCATIONS FOR SAFETY OR UTILITY CLEARANCE.
3. THE MINIMUM STANDARD SIDEWALKS SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 118-49 OF THE NEW BRAUNFELS CODE OF ORDINANCES.
4. ALL LANDINGS WHERE REQUIRED SHALL BE 5'X 5' (60"X60") MINIMUM WITH A MAXIMUM 2% SLOPE IN ANY DIRECTION.
5. RAMP LENGTHS SHALL BE SUFFICIENT TO MAINTAIN A MAXIMUM SLOPE OF 8.33% (1V:12H); MAXIMUM ALLOWABLE CROSS SLOPE ON SIDEWALK AND CURB RAMP SURFACES IS 2% (1V:50H).
6. SIDEWALK GRADES SHALL NOT EXCEED THE GRADE ESTABLISHED FOR THE ADJACENT ROADWAY, ANY SIDEWALK CONSTRUCTION THAT DEVIATES FROM THE GRADE OF THE NATURAL GRADE OF THE ROADWAY TO CREATE A GRADE STEEPER THAN THE EXISTING ROADWAY WILL REQUIRE RAMPS, HANDRAILS, AND LANDINGS IN ACCORDANCE WITH CURRENT ADA AND TAS REQUIREMENTS.
7. PROVIDE FLARED RAMP SIDES WITH A MAXIMUM SLOPE OF 10% (1V:10H) MEASURED ALONG THE CURB LINE. CURB RETURNS MAY BE USED IN LIEU OF SIDE FLARES IN AREAS NOT NORMALLY WALKED ACROSS BY PEDESTRIANS, BECAUSE THE ADJACENT SURFACE IS VEGETATION OR OTHER NON-WALKING SURFACE OR WHERE THE USE APPROACH IS SUBSTANTIALLY OBSTRUCTED.
8. MANEUVERING SPACE AT THE BOTTOM OF CURB RAMPS SHALL BE A MINIMUM OF 4'X 4' (48"X48") WHOLLY CONTAINED WITHIN THE CROSSWALK AND WHOLLY OUTSIDE THE PARALLEL VEHICULAR TRAVEL PATH.
9. CROSSWALK DIMENSIONS, CROSSWALK MARKINGS AND STOP BAR LOCATIONS SHALL BE AS SHOWN ELSEWHERE IN THE PLANS. AT INTERSECTIONS WHERE CROSSWALK MARKINGS ARE NOT REQUIRED, CURB RAMPS SHALL BE ALIGNED WITH THEORETICAL CROSSWALKS, OR AS DIRECTED BY THE CITY ENGINEER OR BUILDING OFFICIAL.
10. EXISTING FEATURES THAT COMPLY WITH CURRENT TAS REQUIREMENTS MAY REMAIN IN PLACE UNLESS OTHERWISE SHOWN ON THE PLANS.
11. HANDRAILS ARE NOT REQUIRED ON CURB RAMPS. PROVIDE CURB RAMPS WHEREVER AN ACCESSIBLE ROUTE CROSSES (PENETRATES) A CURB.
12. SEPARATE CURB RAMP AND LANDINGS FROM ADJACENT SIDEWALK AND ANY OTHER ELEMENTS WITH PRE-MOLD OR BOARD JOINT OF 1/2" UNLESS OTHERWISE DIRECTED BY THE CITY ENGINEER OR BUILDING OFFICIAL.
13. PROVIDE A SMOOTH TRANSITION WHERE THE CURB RAMPS CONNECT TO THE STREET.
14. THE CHANGE OF GRADE BETWEEN ADJACENT SURFACES SHALL BE LESS THAN 11%. THE CHANGE OF GRADE SHALL BE DEFINED AS THE ALGEBRAIC DIFFERENCE OF THE ADJACENT SURFACE SLOPES. IN THE CASE OF A STREET ACCESS RAMP DESIGNED AT THE 8.33% MAXIMUM SLOPE, THE ADJACENT PAVEMENT CROSS SLOPE SHALL BE LESS THAN 2.67% (I.E. 8.33-(-2.67)=11). IN ADDITION, THE ADJACENT PAVEMENT CROSS SLOPE SHALL BE LESS THAN OR EQUAL TO 15%.
15. IF THE CHANGE OF GRADE BETWEEN ADJACENT SURFACES IS GREATER THAN OR EQUAL TO 11%, A LEVELING STRIP, 2 FEET IN LENGTH, SHALL BE PROVIDED TO TRANSITION THE ADJACENT SURFACES.
16. ADA RAMP SHALL BE CONSTRUCTED WITH 5" CLASS 'A' CONCRETE WITH 2" MINIMUM GRAVEL/CRUSHED ROCK OR FLEXIBLE BASE MATERIAL. REINFORCING STEEL SHALL BE #3 BARS AT 18" O.C.E.W. OR 6"x6" - W2.9 X W2.9 WIRE MESH.
17. THE EXTENTS OF ADA COMPLIANCE IN ALTERATIONS SHALL BE WITHIN THE LIMITS, BOUNDARIES OR SCOPE OF A PLANNED PROJECT AND AS DETERMINED BY THE CITY BUILDING OFFICIAL.

DETECTABLE WARNING NOTES

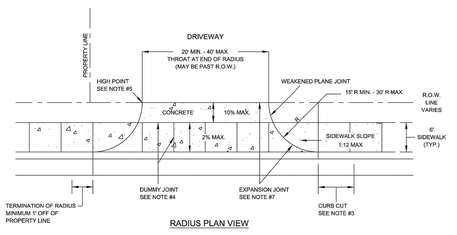
1. CURB RAMPS OR LANDINGS ABUTTING THE CROSSWALK MUST HAVE A DETECTABLE WARNING SURFACE THAT CONSISTS OF RAISED TRUNCATED DOMES COMPLYING WITH SECTION 705 OF THE TEXAS ACCESSIBILITY STANDARDS (TAS). THE SURFACE MUST CONTRAST VISUALLY WITH ADJOINING SURFACES, INCLUDING SIDE FLARES. FURNISH DARK BROWN OR DARK RED DETECTABLE WARNING SURFACE ADJACENT TO UNCOLORED CONCRETE, UNLESS SPECIFIED ELSEWHERE IN THE PLANS.
2. DETECTABLE WARNING SURFACES MUST BE SLIP RESISTANT AND NOT ALLOW WATER TO ACCUMULATE.
3. ALIGN TRUNCATED DOMES IN THE DIRECTION OF PEDESTRIAN TRAVEL WHEN ENTERING THE STREET.
4. DETECTABLE WARNING SURFACES SHALL BE A MINIMUM OF 24" IN DEPTH IN THE DIRECTION OF PEDESTRIAN TRAVEL, AND EXTEND THE FULL WIDTH OF THE CURB RAMP OR LANDING WHERE THE PEDESTRIAN ACCESS ROUTE ENTERS THE STREET.
5. DETECTABLE WARNING SURFACES SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS AT THE BACK OF CURB. ALIGN THE ROWS OF DOMES TO BE PERPENDICULAR TO THE GRADE BREAK BETWEEN THE RAMP RUN AND THE STREET. DETECTABLE WARNING SURFACES MAY BE CURVED ALONG THE CORNER RADIUS.
6. DETECTABLE WARNING MATERIALS MUST MEET TXDOT DEPARTMENTAL MATERIALS SPECIFICATION DMS 4350 AND BE LISTED ON THE MATERIAL PRODUCER LIST. INSTALL PRODUCTS IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.
7. DETECTABLE WARNING PAVERS SHALL NOT BE PERMITTED WITHOUT THE APPROVAL BY THE PUBLIC WORKS DEPARTMENT.

City of New Braunfels ENGINEERING DIVISION
550 LANDA STREET
NEW BRAUNFELS, TEXAS 78130
PHONE: 830 221 4020
FAX: 830 626 3600

CURB RAMP STANDARDS		
APPROVED DATE: 05/18/2017	DWG. NO.: ST-019	SCALE: AS NOTED
DRAWN BY: RC	CONTACT: GF	SHEET: 1 OF 1

SEAL CARD: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by the City of New Braunfels for any purpose whatsoever.

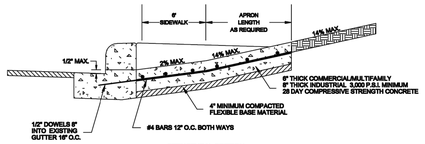
DRIVEWAY APRON
(COMMERCIAL - MULTIFAMILY - INDUSTRIAL)
(RADIAL/FLARED)



DATE APPROVED: 07/2008	DWG. NO: ST-015.1	SCALE: N.T.S.
DRAWN BY: RAS	SHEET: 1 OF 2	
FILENAME: DRIVEWAY (COMMERCIAL - MULTIFAMILY - INDUSTRIAL)		

City of New Braunfels ENGINEERING DEPARTMENT

DRIVEWAY APRON
(COMMERCIAL - MULTIFAMILY - INDUSTRIAL)



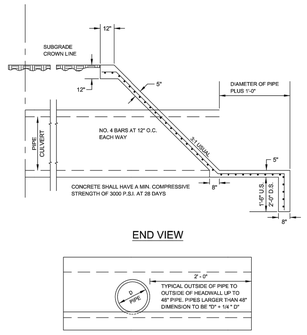
NOTES:

1. **WHERE GUTTER DOES NOT EXIST DRIVEWAY APRON SHALL EXTEND TO EDGE OF ASPHALT AND SHALL HAVE A MINIMUM 6" WIDE 1' DEEP GRADE BEAM MONOLITHIC AND REINFORCED SIMILAR TO APRON.**
2. **PLACEMENT OF SIDEWALK SHOWN IS TYPICAL; HOWEVER, ALTERNATIVE SIDEWALK PLACEMENT COMMON TO DRIVEWAY APRON WILL BE CONSIDERED PROVIDED CROSS SLOPE OF SIDEWALK IS NO GREATER THAN 2%.**
3. **CURB CUT LENGTH NO GREATER THAN AS REQUIRED TO MATCH SLOPE OF ADJACENT SIDEWALK.**
4. **DUMMY JOINTS TO BE PROVIDED AT MINIMUM 4-FT. INTERVALS PERPENDICULAR TO THE CURB LINE WITHIN THE SIDEWALK AREA AND PARALLEL TO THE SIDEWALK AREA.**
5. **PROVIDE A MINIMUM 7" HIGH POINT. HIGH POINT HEIGHT SHALL BE MEASURED FROM THE GUTTER FLOW LINE TO THE DRIVEWAY APRON. NOTE HIGH POINT MAY OCCUR OUTSIDE OF ROW.**
6. **DRIVEWAY THROAT TRANSITION MAY OCCUR OUTSIDE OF ROW.**
7. **PROVIDE EXPANSION JOINTS AT ALL SIDEWALK AND DRIVEWAY THROAT JOINTS. EXPANSION JOINTS SHALL BE PLACED USING 1/2" ASPHALTIC MATERIAL WITH 1/2" DOWELS 18" O.C.**
8. **ALL SIDEWALK AND DRIVEWAY CONSTRUCTION SHALL MEET A.D.A. SPECIFICATIONS.**

DATE APPROVED: 7/08	DWG. NO: ST-015.2	SCALE: N.T.S.
DRAWN BY: RAS	SHEET: 2 OF 2	
FILENAME: DRIVEWAY (Commercial - Multifamily - Industrial)		
P:\CURRENT NEW BRAUNFELS DETAILS\2008\		

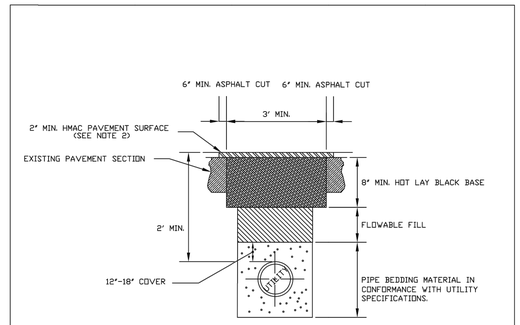
City of New Braunfels ENGINEERING DEPARTMENT

RIPRAP HEADWALL



DATE APPROVED: 07/2008	DWG. NO: ST-023	SCALE: N.T.S.
DRAWN BY: RAS	SHEET: 1 OF 1	
FILENAME: RIPRAP HEADWALL		

City of New Braunfels ENGINEERING DEPARTMENT

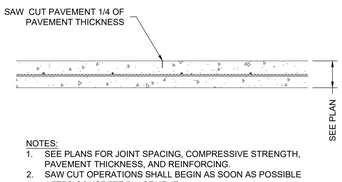


NOTES:

1. THE EXISTING PAVING SURFACE SHALL BE SAW CUT IN A STRAIGHT LINE AT A MINIMUM OF 12" WIDER THAN UNDISTURBED SIDES OF THE TRENCH SYMMETRICAL ABOUT THE CENTERLINE OF THE EXCAVATION.
2. REPLACEMENT HMAC SURFACE LAYER SHALL BE OF THE TYPE AND THICKNESS BASED ON FUNCTIONAL CLASSIFICATION.
   A) MIN. 2"HMAC TYPE "D"FOR TRENCH REPAIRS IN LOCAL/RESIDENTIAL STREETS.
   B) MIN. 3"HMAC TYPE "C"FOR TRENCH REPAIRS IN COLLECTOR/ARTERIAL STREETS.
3. DAMAGED PAVEMENT OUTSIDE THE TRENCH CUT SHALL BE REMOVED AND REPLACED
4. PRIME AND TACK COAT ALL EXPOSED EDGES AND SURFACES.
5. HOT LAY BLACK BASE LAYED IN 8"LIFTS @ 95% COMPACTION.
6. IF EXCAVATION AREA IS OPEN FOR TEMPORARY PUBLIC USE, THE SURFACE SHALL BE MAINTAINED LEVEL WITH ADJACENT RIDING SURFACE WITH COLD MIX AC OR TEMPORARY HMAC.
7. CALICHE OR EXISTING MATERIAL SHALL NOT BE USED TO BACKFILL THE UTILITY EXCAVATION.

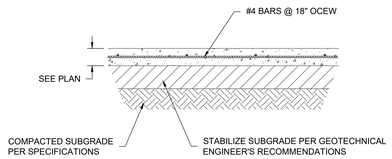
TRENCH REPAIR DETAIL	
ISSUE DATE: APRIL 2015	SCALE: N.T.S
DRAWN BY: AMF	CONTACT: GF

CITY OF NEW BRAUNFELS
ENGINEERING DIVISION
424 S. CASTELL AVE.
NEW BRAUNFELS, TEXAS 78130
PHONE: 830 221 4020
FAX: 830 626 3600



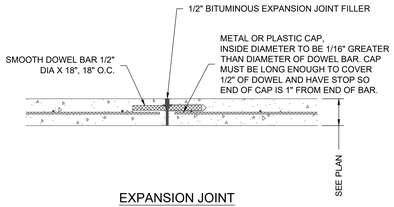
NOTES:
1. SEE PLANS FOR JOINT SPACING, COMPRESSIVE STRENGTH, PAVEMENT THICKNESS, AND REINFORCING.
2. SAW CUT OPERATIONS SHALL BEGIN AS SOON AS POSSIBLE AFTER CONCRETE PLACEMENT.
3. SEAL ALL JOINTS WITH SELF LEVELING JOINT SEALANT MATERIAL PER SPECIFICATIONS.

CONTROL JOINT
NTS

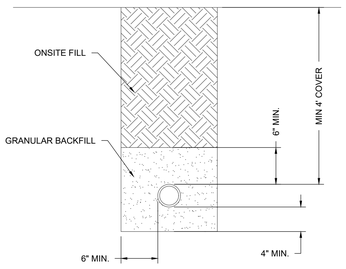


NOTES:
1. SEE PLAN FOR JOINT SPACING, COMPRESSIVE STRENGTH, PAVEMENT THICKNESS, AND REINFORCING.
2. DEPTH OF STABILIZATION SHALL BE A MINIMUM OF 6 INCHES OR BASED ON GEOTECHNICAL RECOMMENDATIONS SUBGRADE CONDITIONS.
3. SUBGRADE STABILIZATION SHALL BE PER GEOTECHNICAL RECOMMENDATIONS AND LIME/CEMENT SERIES BASED ON ACTUAL SUBGRADE CONDITIONS.

CONCRETE PAVEMENT
NTS

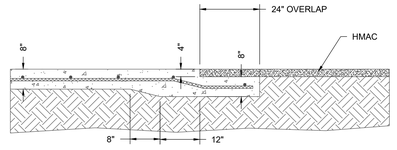


EXPANSION JOINT
NTS



NOTES:
1. GRANULAR BACKFILL SHALL MEET THE SPECIFICATIONS OF TXDOT TYPE A.
2. ONSITE MATERIAL FOR FILL SHALL BE FREE OF DEBRIS AND GRAVEL LARGER THAN 2" IN DIAMETER.
3. UNDER PAVED AREAS, ONSITE FILL SHALL BE STABILIZED AS REQUIRED BY THE GEOTECHNICAL ENGINEER. BACKFILL SHALL BE COMPACTED TO 98% STANDARD PROCTOR DENSITY.
4. UNDER NON-PAVED AREAS, ONSITE FILL MAY BE USED AND SHALL BE COMPACTED IN 10" LIFTS TO 90% STANDARD PROCTOR DENSITY.

PVC EMBEDMENT TRENCH
NTS



NOTE:
1. SEE SHEET TX.3 FOR HMAC PAVEMENT SECTION DETAILS.
2. SEE SHEET 10.0 FOR CONCRETE PAVEMENT SECTION DETAILS.

CONCRETE TO ASPHALT J-JOINT
NTS

100% CD

BROWN REYNOLDS WATFORD ARCHITECTS
2705 BEE CAVE ROAD, BUILDING ONE, SUITE 140, AUSTIN, TEXAS 78746
512.328.8877
WWW.BRWARCHITECTS.COM
BRW

GESSNER ENGINEERING
Corporate Office
2501 Ashford Drive
College Station, Texas 77845
www.gessnerengineering.com
FIRM REGISTRATION NUMBER:
TBPE F-7-451, TBPLS F-10053910
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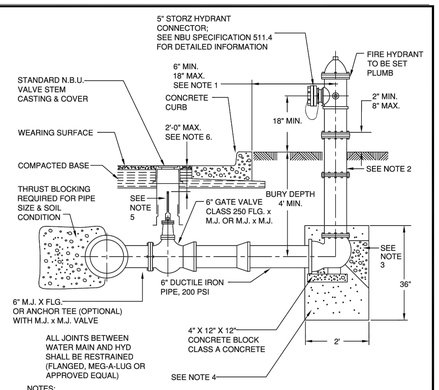
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DATE	DRAWN BY	CHECKED BY	BRW PROJECT NUMBER
11/01/2022	NF	JP	

NEW BRAUNFELS FIRE TRAINING SITE INFRASTRUCTURE
353 FM 306
NEW BRAUNFELS, TX 78130

DATE	REVISION	NO.

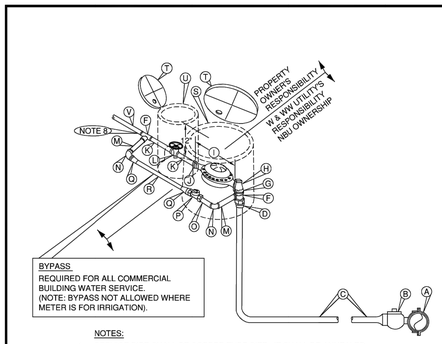
C10.0
DETAILS



NOTES:

1. DIMENSIONS SHOWN ARE APPLICABLE IN SPACE BETWEEN CURB AND SIDEWALK. WHERE WALK ABUTS CURB, AND IN PUBLIC OR COMMERCIAL AREAS, DIMENSION FROM BACK OF CURB SHALL BE 3' TO 9'. HYDRANTS ARE NOT TO BE PLACED IN SIDEWALK AREAS. SEE NEW BRAUNFELS UTILITIES STANDARD SPECIFICATIONS FOR LOCATION OF HYDRANT.
2. FOR BURY DEPTHS GREATER THAN 5', ONE BARREL EXTENSION NOT EXCEEDING 2' LENGTH SHALL BE INSTALLED DIRECTLY BELOW THE FIRE HYDRANT.
3. CONCRETE BLOCKING WITH A MIN. 1 1/2 FT^2 BEARING AREA. CLASS A CONCRETE. DO NOT BLOCK DRAIN HOLES.
4. CRUSHED STONE OR GRAVEL SHALL BE PLACED AROUND THE BOTTOM OF THE HYDRANT FOR A RADIUS OF AT LEAST 12" AND EXTEND AT LEAST 12" ABOVE THE OUTLET. DO NOT BLOCK DRAIN HOLES.
5. WELD SOCKET 2 1/2" X 2" DEEP TO 1" SCH. 40 ROUND STEM EXTENSION, FITTED ON OPERATING NUT, SCH. 80 FOR LENGTHS OVER 10'.
6. VALVE EXTENSIONS ARE REQUIRED ON ALL VALVES THAT EXCEED 3' DEEP FROM FINISHED GRADE. VALVE EXTENSIONS SHALL BE PLACED SUCH THAT THE EXTENSION NUT IS BETWEEN 18" AND 24" FROM FINISHED GRADE.

NBU NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING	DRAWN BY: JD Amaro	APPROVED BY:	STANDARD DRAWING: STANDARD FIRE HYDRANT INSTALLATION WITH 5" STORZ CONNECTOR				
	DRAWING DATE: 4-10-03	REVISION DATE: 5-22-12	SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO. 240		



NOTES:

1. SERVICE PIPE SHALL BE COPPER TUBE SIZE. IT SHALL BE ANNEALED SEAMLESS TYPE "K" COPPER TUBING MEETING THE CURRENT ASTM B88 STANDARD WITH NO SWEAT OR SOLDERED JOINTS.
2. SERVICE SADDLE SHALL BE WRAPPED COMPLETELY WITH 8 MIL POLYETHYLENE FILM.
3. TOP OF BOXES SHOULD BE 1" ABOVE GROUND OR FLUSH WITH PAVEMENT SURFACE.
4. IF TWO METERS ARE INSTALLED WITH A SINGLE SERVICE LINE, THEY SHALL BE INSTALLED IN SEPARATE BOXES WITH PIPING AS SHOWN FROM A TEE. THE COMMON SERVICE LINE TO THE TEE SHALL BE 2" FOR TWO 1-1/2" METERS, OR 4" DUCTILE IRON PIPE FOR TWO 2" METERS. CUT OFF VALVE SHALL BE INSTALLED PRIOR TO TEE.
5. PIPING AND TUBING IN STREET RIGHT-OF-WAY SHALL BE BEDDED IN GRANULAR MATERIALS AS REQUIRED BY SPECIFICATIONS; BACKFILL ABOVE GRANULAR BEDDING AS REQUIRED BY SPECIFICATIONS.
6. BOX CONSISTENTLY SPACED BEHIND CURB WITH A MAXIMUM OF 12" AND/OR SIDEWALK (6" FROM PROPERTY LINE) AND OUT OF VEHICULAR TRAFFIC AREA.
7. ANGLE STOP PLACED A MAXIMUM OF 4" FROM BACK OF BOX THAT FACES CURB.
8. FOR ALL IRRIGATION OR COMMERCIAL: DUAL CHECK BACKFLOW DEVICE PER BACKFLOW PREVENTION POLICY.

NBU NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING	DRAWN BY: H Shadrock	APPROVED BY:	STANDARD DRAWING: STANDARD INSTALLATION DETAIL FOR 1-1/2" & 2" METER INSTALLATION SHOWING OPTIONAL BYPASS				
	UPDATED: 4-22-03	SCALE: N.T.S.	SHEET: 1 OF 2	DRAWING NO. 203			

MATERIALS LIST	METER SIZE 1-1/2"	2"
A. SERVICE CLAMP FOR CONNECTION - REQUIRED ON ALL PLASTIC AND ASBESTOS-CEMENT PIPE AND ALL IRON PIPE 12" AND SMALLER.	1-1/2"	2"
B. CORPORATION STOP - SERVICE PIPE OUTLET.	1-1/2"	2"
C. SERVICE PIPE.	1-1/2"	2"
D. COUPLING: SERVICE PIPE TO MALE I.P.T. (COMPRESSION FITTING)	1-1/2"	2"
F. TEES, BRASS.	1-1/2"x1-1/2"x1"	2"x2"x1"
G. CLOSE-NIPPLE, BRASS.	1-1/2"	2"
H. ANGLE METER STOP, FEMALE I.P. THREAD INLET X FLANGE OUTLET.	1-1/2"	2"
I. WATER METER LENGTH WITH GASKETS.	13-1/2"	17-3/4"
J. FLANGE, BRASS; FEMALE I.P. THREAD.	1-1/2"	2"
K. NIPPLES, BRASS.	1-1/2" x 8"	2" x 8"
L. CUSTOMER'S CUT OFF VALVE.	1-1/2"	2"
M. NIPPLES, BRASS.	1" x 5"	1" x 5"
N. 90 DEGREE ELBOWS, BRASS.	1"	1"
O. NIPPLES, BRASS.	1" x 3"	1" x 3"
P. CURB STOP, BRASS, FEMALE I.P. THREAD BOTH ENDS WITH LOCK NUTS.	1"	1"
Q. COUPLINGS, BRASS, SERVICE PIPE TO MALE THREAD.	1"	1"
R. SERVICE PIPE.	1"	1"

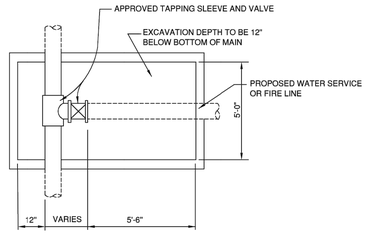
S. ROUND OR RECTANGULAR METER BOX - EAST JORDAN IRON WORKS #2 METER BOX, NBU# 89004000003.

T. LID

U. CUSTOMERS CUT-OFF VALVE BOX MAY BE 12" PIECE SDR 26, 6" PVC

V. METAL PIPE, 4' MINIMUM LENGTH.

NBU NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING	DRAWN BY: H Shadrock	APPROVED BY:	STANDARD DRAWING: STANDARD INSTALLATION DETAIL FOR 1-1/2" & 2" METER INSTALLATION SHOWING OPTIONAL BYPASS				
	UPDATED: 4-22-03	SCALE: N.T.S.	SHEET: 2 OF 2	DRAWING NO. 203			

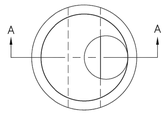


NBU NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING	DRAWN BY: H Shadrock	APPROVED BY:	STANDARD DRAWING: MINIMUM EXCAVATION CLEARANCE FOR INSTALLATION OF PRESSURE TAP				
	UPDATED: 4-24-03	SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO. 222			

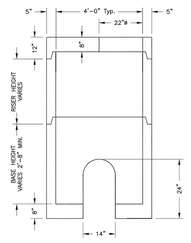
WATER

Oldcastle Precast®

4'-0" Dog House Manhole
Model: **4DH MH**



PLAN



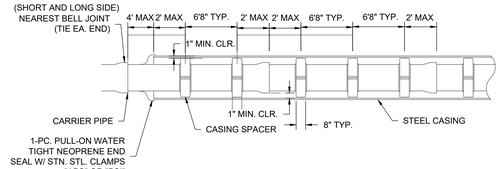
SECTION A-A

GENERAL NOTES:
1. Concrete: 28 Day Compressive Strength f'c = 4,000psi.
2. Steel Reinforcement: ASTM A-615, Grade 60, ASTM A-185.

Mid Atlantic Region

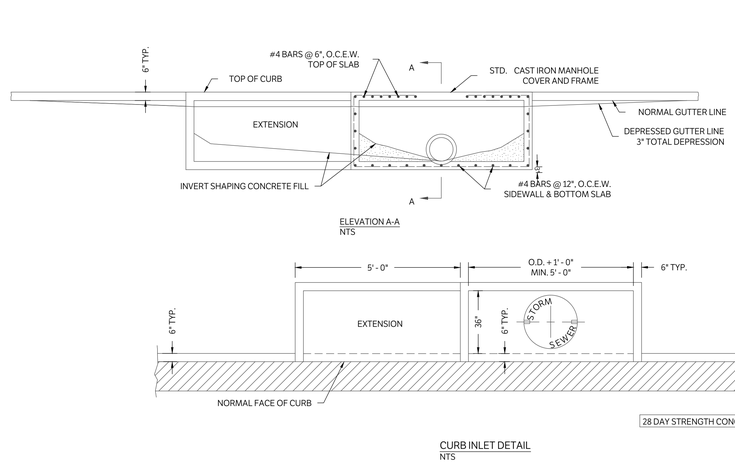
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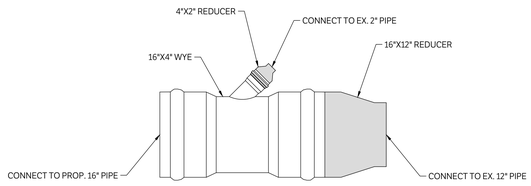


NOTE:
CASING SPACERS 4-RUNNER MIN. (THRU 24" DIA CASING) OR 6-RUNNER MIN. (24"-42" DIA. CASING) STAINLESS STL. TYPE304; 8" WIDE BAND W/ POLYMER RUNNERS; CENTERED OR NON-CENTERED; CLEAR BELL, RESTRAINED FROM LOCATION; INSULATED; "APS, INC., MOD SS18" OR "CASCADE"

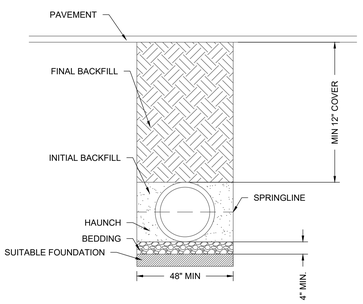
CASING DETAIL
NTS



CURB INLET DETAIL
NTS



FORCE MAIN CONNECTION DETAIL
NTS



OTHER PIPE SIZES:

PIPE DIA.	MIN. TRENCH WIDTH	MAX. COVER (CLASS III FILL, 85% COMPACTION)
12"	30"	14'
15"	34"	15'
18"	39"	13'
24"	48"	11'
30"	56"	13'
36"	64"	11'
42"	72"	12'
48"	80"	11'
60"	96"	11'

MIN. COVER BASED ON VEHICLE LOADING:

PIPE DIA.	H-25	HEAVY CONSTRUCTION (75T AXLE LOAD)
12"-48"	12"	48"
54"-60"	24"	60"

BEDDING:

PIPE DIA.	BEDDING
12"-24"	4"
30"-60"	6"

NOTES:

1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321
2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.
3. FOUNDATION: WHERE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER.
4. BEDDING: SUITABLE BEDDING MATERIAL SHALL BE CLASS I, II OR III, PER MANUFACTURER'S SPECIFICATION. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO THE ENGINEER.
5. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE, PER MANUFACTURER'S SPECIFICATION. CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO THE ENGINEER.
6. MINIMUM COVER: MINIMUM COVER, H, IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE FOR PIPES WITH DIAMETERS UP TO 48". ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOTATION.

24" POLYPROPYLENE EMBEDMENT TRENCH UNDER PAVEMENT
NTS

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DATE 11/01/2022
DRAWN BY NF
CHECKED BY JP
BRW PROJECT NUMBER

NEW BRAUNFELS FIRE TRAINING SITE INFRASTRUCTURE
353 FM 306
NEW BRAUNFELS, TX 78130

NO.	REVISION	DATE

100% CD

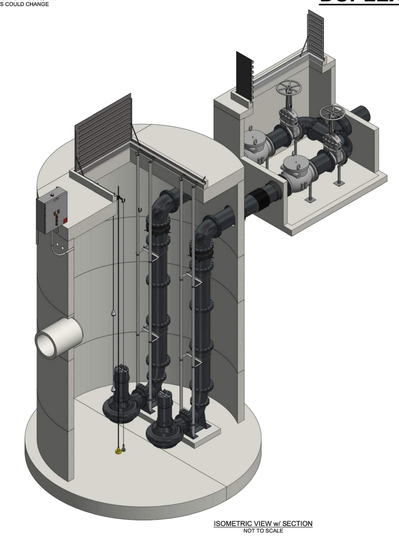
C10.1

DETAILS

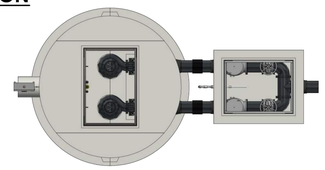
PRELIMINARY DRAWING
NOT FOR CONSTRUCTION

THICKNESSES, NUMBER OF PIECES, AND TYPES OF PIECES COULD CHANGE

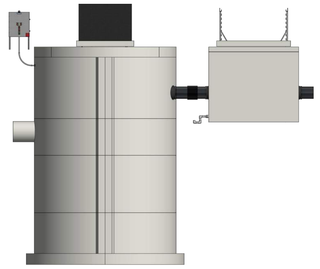
NEW BRAUNFELS FIRE STATION
DUPLEX PUMP STATION



ISOMETRIC VIEW w/ SECTION
NOT TO SCALE



PLAN VIEW
NOT TO SCALE



PROFILE VIEW
NOT TO SCALE

New Braunfels Fire Station 16192-DV.dwr

DISCLAIMERS, INCLUDING BUT NOT LIMITED TO:
1.) All elevations have been provided by others, and have not been verified by Jensen Precast. Contractor to verify all dimensions and elevations in field prior to installation.
2.) These layout drawings are intended to show overall system design only. All concrete component thicknesses, dimensions, and joint orientations may vary across Jensen Precast's manufacturing facilities. Contractor to confirm all thicknesses, dimensions, and joint orientations prior to installation.
3.) System design criteria has been provided to Jensen Precast. Others are responsible for verification that system meets intended application.
4.) Foundation, subgrade, and backfill to be designed by others.

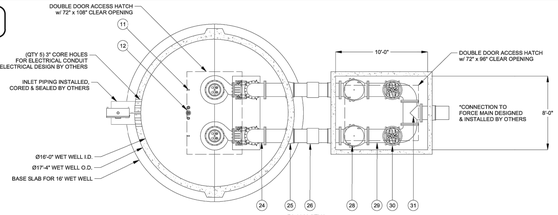
JENSEN PRECAST PUMP STATIONS
521 DUNN CIRCLE, SPARKS, NV 89431
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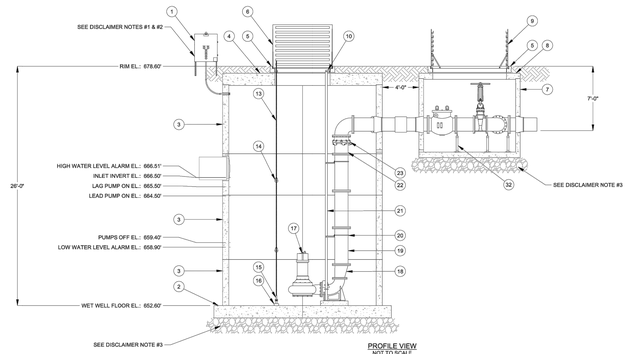
DESCRIPTION:	NEW BRAUNFELS FIRE STATION PS		REV:
	TITLE SHEET		SHEET:
PART NUMBER: New Braunfels Fire Station 16192-DV	DRAWN BY:	T. Handke	1 OF 2
CREATED:	MODIFIED:	9/28/2021	

PRELIMINARY DRAWING
NOT FOR CONSTRUCTION

THICKNESSES, NUMBER OF PIECES, AND TYPES OF PIECES COULD CHANGE



PLAN VIEW
NOT TO SCALE



PROFILE VIEW
NOT TO SCALE

BILL OF MATERIALS

ITEM	QTY	DESCRIPTION
1	1	DUPLEX ALTERNATING CONTROL PANEL
2	2	JENSEN PRECAST CONCRETE BASE FOR 196IN MANHOLE
3	8	196IN DIA. JENSEN PRECAST CONCRETE MANHOLE BARREL
4	3	196IN DIA. JENSEN PRECAST CONCRETE MANHOLE FLAT TOP
5	2	JENSEN PRECAST CONCRETE HATCH RISER
6	1	DOUBLE DOOR HATCH WITH A CLEAR OPENING OF 72IN X 108IN
7	1	JENSEN PRECAST CONCRETE VAULT BASE 8'x10'
8	1	JENSEN PRECAST CONCRETE VAULT FLAT TOP 8'x10'
9	1	DOUBLE DOOR HATCH WITH A CLEAR OPENING OF 72IN X 96IN
10	2	2.5" UPPER GUIDE RAIL BRACKET FOR HOMA AKX1268
11	2	JMT FLOAT BRACKET 1-HOOK FORMED SS
12	1	JMT FLOAT BRACKET 3-HOOK FORMED SS
13	26 LF	LF CHAIN 1/4IN 316SS
14	2	FLOAT SWITCH 105FT COX OPTI-F1100
15	1	PRESSURE TRANSDUCER 15PSI 100FT CABLE DWYER PBLTX-15-100-PU
16	1	ANCHOR 15LB PVC COATED
17	2	HOMA SUBMERSIBLE NON-CLOG PUMP [MODEL # AKX1268-470/70G/C] WITH AUTO COUPLING, THERMAL AND SEAL FAIL SENSORS, STANDARD CABLE LENGTH OF 30FT, EXTERIOR COATED WITH HIGH SOLIDS POLYAMIDE EPOXY.
18	2	REDUCER 12X16IN DIP
19	6	16IN DIP FLG x FLG 6FT SPOOL
20	4	INTERMEDIATE GUIDE RAIL BRACKET BY HOMA FOR 2.5" RAILS AND 16" DIP
21	120 LF	LF PIPE 2-1/2IN SCH40 GUIDE RAIL 304SS
22	7	PIPE 16IN FLG X PE DUCTILE IRON SPOOL 5FT *CUT TO LENGTH AS NEEDED*
23	2	16" RFGA W/ SS HARDWARE
24	4	90 DEG ELBOW 16IN DUCTILE IRON FLG
25	5	PIPE CONNECTOR FOR 16IN DIP & 20IN CORE
26	2	MJ SLEEVE 16IN w/ SS BOLT AND MJ GASKET
27	1	2IN DIA. SCH40 PVC VAULT DRAIN w/ CHECK VALVE, TRAP & FITTINGS
28	2	16IN FLG CHECK VALVE
29	2	PIPE 16IN FLG X FLG DUCTILE IRON SPOOL 2FT
30	2	16IN FLG ISOLATION VALVE
31	1	TEE 16IN DUCTILE IRON FLG
32	5	FLG PIPE SUPPORT 16IN

GENERAL NOTES
1.) Others responsible for sizing, design, supply and installation of electrical conduits. Contractor responsible for verifying pump and level detection cable lengths are adequate.
2.) Others responsible for force main and force main connection design.
3.) Inlet pipe shown for clarity only. Others responsible for providing pipe.

INSTALLATION NOTES
1.) Precast concrete joints to be sealed using butyl rubber compound and supplied by Jensen Precast.
2.) Contractor to adjust elevation of frame and cover in field as necessary.
3.) Contractor to provide all pipe openings in field as necessary.
4.) Contractor to grout all pipe penetrations in precast concrete openings in field as necessary.

DESIGN NOTES
1.) Designed in accordance with ASTM C890 and ACI 318 for AASHTO HS-20 traffic loading.
2.) Structures are not suitable for additional loading conditions, such as but not limited to : footing loads, foundation loads, seismic loads, etc.
3.) Groundwater assumed to be below bottom of structure.
4.) Bury depth is assumed to be between 1-FT to 5-FT to top of structure / bury depth is as indicated on layout drawing.

DESIGN NOTES / DISCLAIMERS:
1. CONTROL PANEL INSTALLATION, MOUNTING DESIGN & HARDWARE BY OTHERS.
2. FINAL CONTROL PANEL LOCATION TO BE DETERMINED ACCORDING TO PROJECT REQUIREMENTS. CONSULT ALL SUBMITTED PUMP AND LEVEL CONTROL CABLE LENGTHS WHEN DETERMINING THE CONTROL PANEL LOCATION.
3. ALL FOUNDATION, SUBGRADE, AND BACKFILL DESIGNED BY OTHERS.

PUMP CHARACTERISTICS

DESCRIPTION	VALUE
DUTY POINT	6250 GPM @ 65.4' TDH
MANUFACTURER	HOMA
MODEL NUMBER	AKX1268-530/154H/C
PUMP TYPE	SUBMERSIBLE NON-CLOG PUMP
MOTOR SIZE	154.20 HP
MAX PUMP RUN SPEED	870 rpm
AVAILABLE POWER	460 V, 3 Ph, 205.0 A

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DESCRIPTION:	NEW BRAUNFELS FIRE STATION PS		REV:
	MECHANICAL DETAIL		SHEET:
PART NUMBER: New Braunfels Fire Station 16192-DV	DRAWN BY:	T. Handke	2 OF 2
CREATED:	MODIFIED:	9/28/2021	

Technical Information
AKX1268-530/154H/C

Operating data

Flow	6250 US g.p.m.
Head	65.4 ft
Shaft power P2	132 hp
Pump efficiency	79.1 %
Required pump NPSH	
Pump type	Single pump
No. of pumps	1
Fluid	Wastewater

Pump

Pump Code	AKX1268-530/154H/C
Impeller	Multi channel impeller
Impeller size	20½"
Solid size	6 inch
Discharge port	12" ANSI
Suction port	DN350

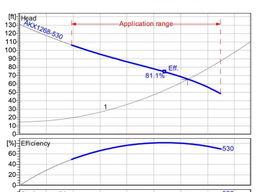
Motor

Rated voltage	460 V
Frequency	60 Hz
Rated power P2	154.2 hp
Rated speed	870 rpm
Number of poles	8
Efficiency	93 %
Rated current	205 A
Degree of protection	IP 68

Materials

Motor housing	Cast Iron ASTM A48;CI.40B
Impeller	Ductile cast iron ASTM A536
Pump housing	Ductile cast iron ASTM A536
Wear ring	Bronze ASTM B505; C93200
Motor shaft	Stainless steel AISI 420
Bolts	AISI 304 Stainless Steel
Elastomeres	Nitrile Rubber
Mechanical seal on motor side	SiC / SiC
Mechanical seal on medium side	SiC / SiC
Lower Bearing	Two angular ball bearings
Upper Bearing	Deep Groove Ball Bearing

Testnorm: **HI Standard Grade 2B**



Wet well installation with coupling kit (H, 490...530)
Dimensions in mm [inch], letters see table

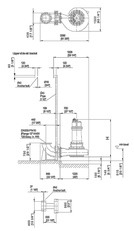


Table Dimensions (inch)

H	69 13/16

2.8.1 - 14.09.2020 (Build 147)

Project	Project no.:	Created by:	Page: 1	Date: 2021-09-03

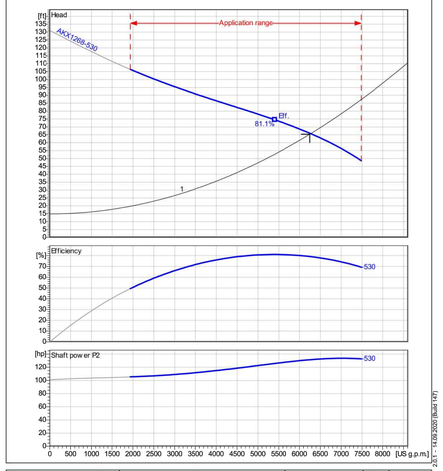
Performance Curve
AKX1268-530/154H/C

Impeller					
Impeller type: Multi channel impeller	Solid size: 6 inch	Ø:	Max. Ø: 20½"	Min. Ø: 18¾"	Sel. Ø: 20½"

Operating data				
Speed: **870 rpm**	Frequency: **60 Hz**	Duty point: **Q =6250 US g.p.m.H =65.4 ft**	Shaft power P2: **132 hp**	Discharge port: **12" ANSI**

Power data refered to:
Water, clean [100%] ; 68°F; 62.322lb/ft³; 1.0818E-5ft²/s

Testnorm: **HI Standard Grade 2B**



2.8.1 - 14.09.2020 (Build 147)

Project	Project no.:	Created by:	Page: 2	Date: 2021-09-03

Dimensions
AKX1268-530/154H/C

Wet well installation with coupling kit (H, 490...530)
Dimensions in mm [inch], letters see table

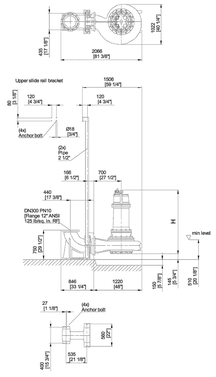


Table Dimensions (inch)

H	69 13/16

min level = Minimum f luid level for intermittent operation (S3)

2.8.1 - 14.09.2020 (Build 147)

Project	Project no.:	Created by:	Page: 3	Date: 2021-09-03

Technical Data
AKX1268-530/154H/C

Operating data					
Flow	**6250 US g.p.m.**		**Head**	**65.4 ft**	**ft**
Shaft power P2	**131.5**	**hp**	**Static head**	**14.9**	**ft**
Pump efficiency	**79.1**	**%**	**Required pump NPSH**		**ft**
Pumpe type	Single pump		No. of pumps	1	
Fluid	Wastewater		Temperature	68	°F
Density	62.31	lb/ft³	Kin. viscosity	1.077E-5	ft²/s

Pump					
Pump Code	AKX1268-530/154H/C		Speed	870	rpm
Suction port	DN350		Head Max.	106.4	ft
Discharge port	12" ANSI		Head Min.	48.6	ft
Impeller type	Multi channel impeller		Flow Max.	7484.9	US g.p.m.
Solid size	6	inch	Pump efficiency max.	81.1	%
Impeller Ø	20.9	inch	Required rated power max. P2	133.7	hp

Motor					
Motor design	Submersible motor		Insulation class	H	
Motor name	AM376.166H/8/3		Degree of protection	IP 68	
Frequency	60	Hz	Temperature class		
Rated power P1	165.8	hp	NEMA code		
Rated power P2	154.2	hp	Explosion protection		
Rated speed	870	rpm	Efficiency 100%	93.0	%
Rated voltage	460	V | 3~	Efficiency at % rated power 75%	93.0	%
Rated current	205.0	A	at % rated power 50%	92.0	%
Starting current, direct starting	1010.7	A	cos phi 100%	0.76	
Starting current, star-delta	3(	A	cos phi at % rated power 75%	0.76	
Starting mode	Directly		50%	0.67	
Power cable	2 x 4G25		Control cable	7G1,5	
Type of power cable	H07RN8-F PLUS		Type of control cable	H07RN-F	
Cable length	32.8 ft		Service factor	1.15	
Shaft seal	Mechanical seal on motor side		SiC / SiC		
	Mechanical seal on medium side		SiC / SiC		
Bearing	Lower Bearing		Two angular ball bearings		
	Upper Bearing		Deep Groove Ball Bearing		
Remarks					

Materials / Weight				
Motor housing	Cast Iron ASTM A48;CI.40B	Bolts	AISI 304 Stainless Steel	
Pump housing	Ductile cast iron ASTM A536	Elastomeres	Nitrile Rubber	
Impeller	Ductile cast iron ASTM A536			
Wear ring	Bronze ASTM B505; C93200			
Motor shaft	Stainless steel AISI 420			
Weight aggregat	3267.2 lb			

2.8.1 - 14.09.2020 (Build 147)

Project	Project no.:	Created by:	Page: 4	Date: 2021-09-03

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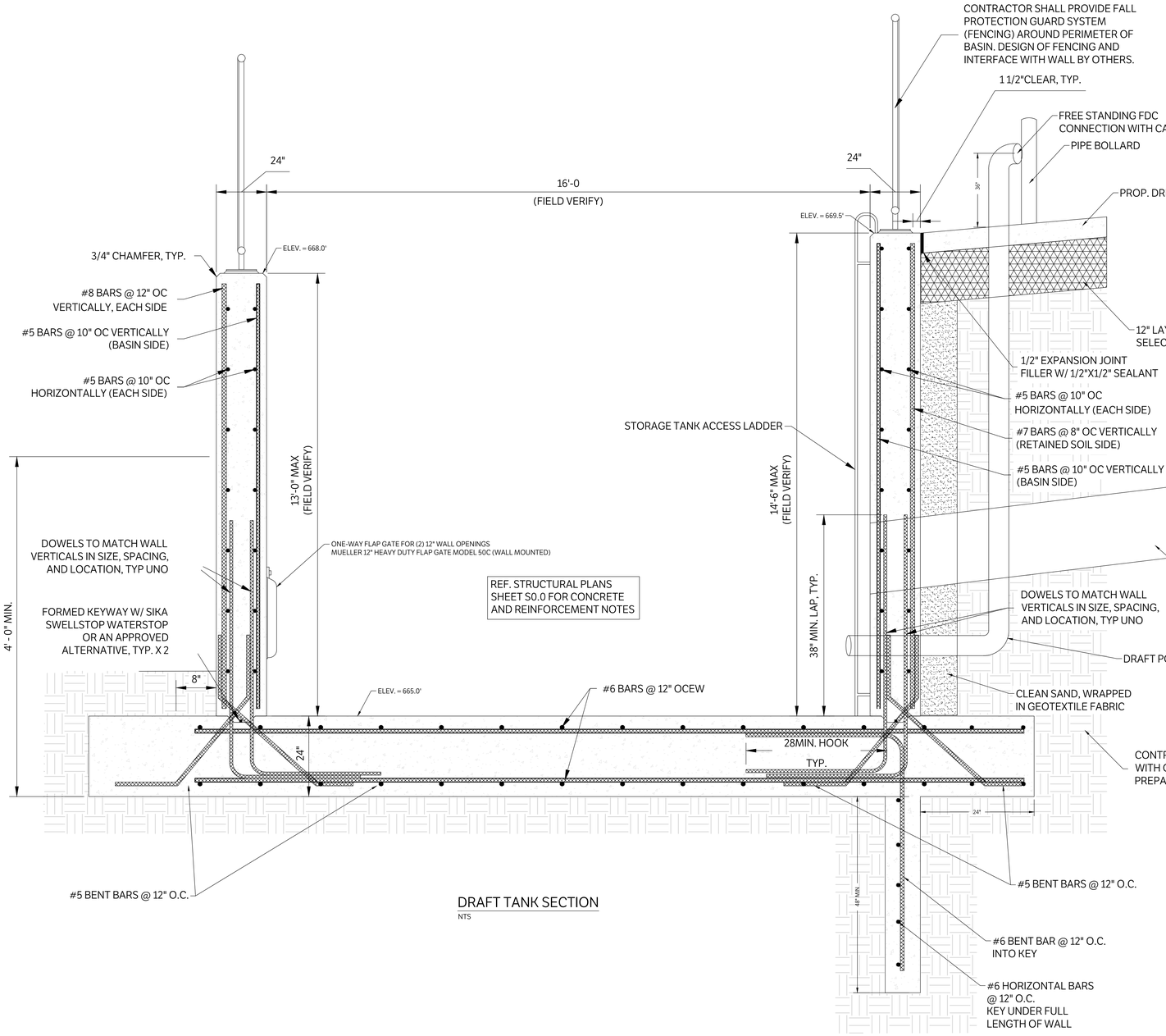
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BRW PROJECT NUMBER

NEW BRAUNFELS FIRE TRAINING SITE INFRASTRUCTURE
353 FM 306
NEW BRAUNFELS, TX 78130

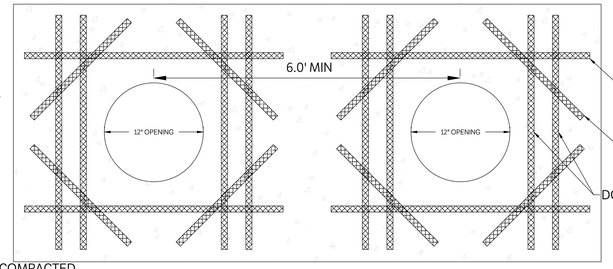
NO.	REVISION	DATE

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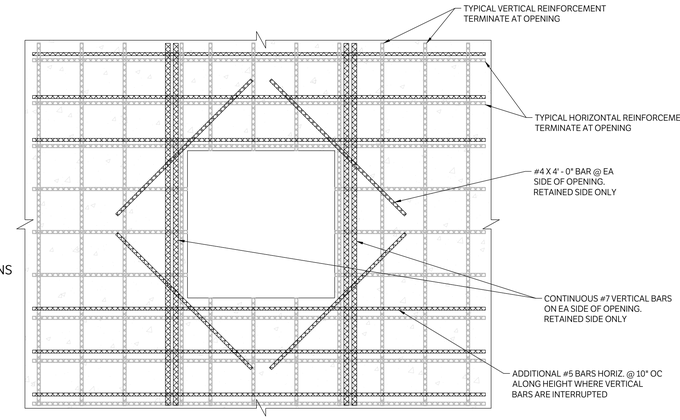
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DETAILS



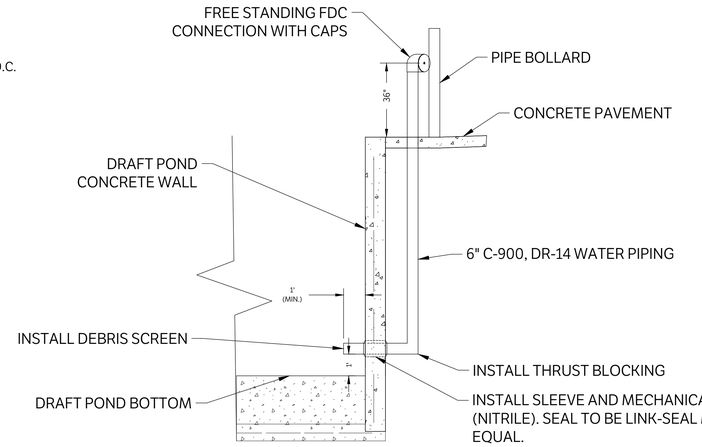
DRAFT TANK SECTION
NTS



FLAP DRAIN OPENING
NTS



STORM DRAIN OPENING
NTS



DRAFTING POND PIPE CONNECTION DETAIL
NTS

NOTE:
1. MINIMUM CONCRETE 29-DAY COMPRESSIVE STRENGTH SHALL BE 4,000 PSI.
2. CLEAR COVER TO REINFORCEMENT SHALL BE 3" MIN., TYP.
3. RETAINING WALL IS DESIGNED TO RESIST IN SERVICE CONDITIONS. CONTRACTOR SHALL TAKE CARE TO BRACE THE WALL DURING CONSTRUCTION SHOULD HEAVY DUTY EQUIPMENT BE UTILIZED AT THE RETAINED SIDE OF THE WALL.

100% CD

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NEW BRAUNFELS FIRE TRAINING SITE INFRASTRUCTURE
353 FM 306
NEW BRAUNFELS, TX 78130

NO.	REVISION	DATE

C10.3
DETAILS

TABLE OF DIMENSIONS AND REINFORCING STEEL
(Wings for one structure end)

Maximum Wingwall Height He	W	X	Y	Z	Variable Reinforcing: Bars J1 Size	Bars J1 Spa	Bars J2 Size	Bars J2 Spa	Estimated (3) per ft of wing length (2-wings): Reinf (Lb/Ft)	Conc (CY/Ft)
2'-6"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	33.73	0.248
3'-0"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	37.07	0.261
3'-6"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	37.74	0.273
4'-0"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	38.41	0.285
4'-6"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	41.75	0.330
5'-0"	3'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	45.09	0.343
5'-6"	3'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	45.75	0.355
6'-0"	3'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	46.42	0.367
7'-0"	3'-8"	1'-9"	1'-0"	7"	#4	1'-0"	#4	1'-0"	52.77	0.414
8'-0"	4'-2"	2'-0"	1'-6"	8"	#5	1'-0"	#4	1'-0"	60.19	0.486
9'-0"	4'-8"	2'-3"	2'-0"	8"	#5	6"	#4	6"	81.49	0.535
10'-0"	5'-2"	2'-6"	2'-0"	8"	#5	6"	#4	6"	97.25	0.584
11'-0"	5'-8"	2'-9"	2'-3"	8"	#6	6"	#5	6"	133.65	0.634
12'-0"	6'-2"	3'-0"	2'-6"	9"	#7	6"	#5	6"	162.29	0.721
13'-0"	6'-8"	3'-3"	2'-9"	11"	#7	6"	#5	6"	178.80	0.856
14'-0"	7'-2"	3'-6"	3'-0"	1'-0"	#8	6"	#5	6"	216.78	0.959
15'-0"	7'-8"	4'-0"	3'-0"	1'-1"	#9	6"	#6	6"	283.06	1.068
16'-0"	8'-2"	4'-0"	3'-0"	1'-3"	#9	6"	#6	6"	297.02	1.234

TABLE OF WINGWALL REINFORCING
(2-wings)

Bar	Size	No.	Spa
D	#5	~	1'-0"
E	#4	~	1'-0"
F	#4	~	1'-0"
G	#6	4	~
H	#4	4	~
P	#4	~	1'-0"
R	#5	6	~
V	#4	~	1'-0"

TABLE OF ESTIMATED CULVERT TOEWALL QUANTITIES

Bar	Size	No.	Spa
L	#4	~	1'-0"
Q	#4	1	~
Reinf (Lb/Ft)			2.45
Conc (CY/Ft)			0.037

WING DIMENSION FORMULAS:
(All values are in feet.)

He = H + T + C - 0.250
A = (He - 0.333') (SL)
B = (A) tangent (30°)
Lw = (A) ÷ cosine (30°)

For cast-in-place culverts:
Ltw = (N) (S) + (N + 1) (U)

For precast culverts:
Ltw = (N) (2U + S) + (N - 1) (0.5')

Total wingwall area (two wings ~ SF) = (He + 0.333) (Lw)

He = Height of wingwall
SL:1 = Side slope ratio (horizontal:1 vertical)
Lw = Length of wingwall
Ltw = Culvert toewall length
N = Number of culvert spans

See applicable box culvert standard sheet for H, S, T, and U values.

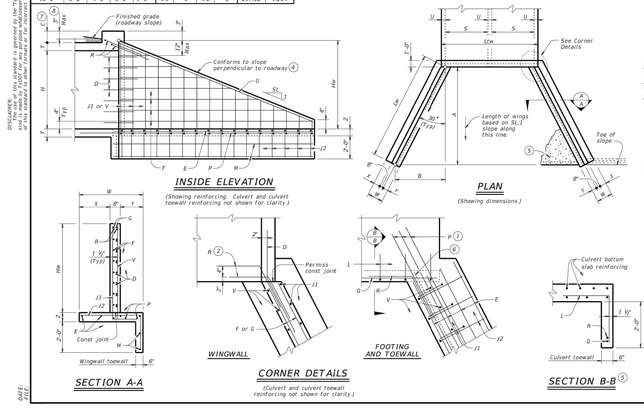
1. Extend Bars P 3'-0" minimum into bottom slab of box culvert.
2. Adjust as necessary to maintain 1 1#2" clear cover and 4" minimum between bars.
3. Quantities shown are based on an average wing height for two wings (one structure end). To determine total quantities for two wings, multiply the tabulated values by 1x.
4. Recommended values of side slope are: 2:1, 3:1, 4:1, and 6:1.
5. When shown elsewhere on the plans, construct 5" deep concrete riprap. Payment for riprap is as required by Item 432, "Riprap". Unless otherwise shown on the plans or directed by the Engineer, construct riprap 4'-0" wide, measured from the concrete toewall along all edges of the riprap adjacent to natural ground; reinforce the toewall by extending typical riprap reinforcing into the toewall; and extend construction joints or grooved joints oriented in the direction of flow across the full distance of the riprap at intervals of approximately 20'. When such riprap is provided, the culvert toewall shown in SECTION B-B will not be required.
6. At Contractor's option, culvert toewall may be ended flush with wingwall toewall. Adjust reinforcing as needed.
7. 0" Min to 5'-0" Max. Estimated curb heights are shown elsewhere in the plans. For structures with pedestrian rail or curbs taller than 1'-0, refer to the Extended Curb Details (ECD) standard sheet. For structures with T631 or T631LS bridge rail, refer to the Mounting Details for T631 & T631LS Rails (T631-CM) standard sheet. Refer to the Box Culvert Rail Mounting Details (RAC) standard sheet for structures with bridge rail other than T631 or T631LS.
8. For vehicle safety, the following requirements must be met:
   - For structures without bridge rail, construct curbs no more than 3" above finished grade.
   - For structures with bridge rail, construct curbs flush with finished grade.

   Reduce curb heights, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.

MATERIAL NOTES:
Provide Class C concrete (f'c=3,600 psi).
Provide Grade 60 reinforcing steel.
Provide galvanized reinforcing steel if required elsewhere in the plans.
In riprap concrete synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing unless noted otherwise.

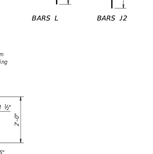
GENERAL NOTES:
Designed according to AASHTO LRFD Bridge Design Specifications.
When structure is founded on solid rock, depth of toewalls for culverts and wingwalls may be reduced or eliminated as directed by the Engineer.
See Box Culvert Supplement (BCS) standard sheet for additional dimensions and information.
The quantities for concrete and reinforcing steel resulting from the formulas given on this sheet are for Contractor's information only.

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



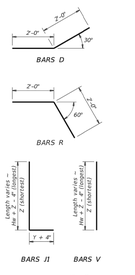
INSIDE ELEVATION
(Showing reinforcing. Culvert and culvert toewall reinforcing not shown for clarity.)

WINGWALL
CORNER DETAILS
(Culvert and culvert toewall reinforcing not shown for clarity.)



FOOTING AND TOEWALL

PLAN
(Showing dimensions.)



SECTION B-B (5)

Texas Department of Transportation — Bridge Division Standard

CONCRETE WINGWALLS
WITH FLARED WINGS FOR
0° SKEW BOX CULVERTS

FW-0

file: fw-0skb-20.dgn	dn: GAF	ck: CAE	dw: TxDOT	ck: TxDOT
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REVISIONS	DIST	COUNTY		SHEET NO.

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TABLE OF DIMENSIONS AND REINFORCING STEEL
(Wings for one structure end)

Maximum Wingwall Height He	W	X	Y	Z	Variable Reinforcing: Bars J1 Size	Bars J1 Spa	Bars J2 Size	Bars J2 Spa	Estimated (3) per ft of wing length (2-wings): Reinf (Lb/Ft)	Conc (CY/Ft)
2'-6"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	33.73	0.248
3'-0"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	37.07	0.261
3'-6"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	37.74	0.273
4'-0"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	38.41	0.285
4'-6"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	41.75	0.330
5'-0"	3'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	45.09	0.343
5'-6"	3'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	45.75	0.355
6'-0"	3'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	46.42	0.367
7'-0"	3'-8"	1'-9"	1'-0"	7"	#4	1'-0"	#4	1'-0"	52.77	0.414
8'-0"	4'-2"	2'-0"	1'-6"	8"	#5	1'-0"	#4	1'-0"	60.19	0.486
9'-0"	4'-8"	2'-3"	2'-0"	8"	#5	6"	#4	6"	81.49	0.535
10'-0"	5'-2"	2'-6"	2'-0"	8"	#5	6"	#4	6"	97.25	0.584
11'-0"	5'-8"	2'-9"	2'-3"	8"	#6	6"	#5	6"	133.65	0.634
12'-0"	6'-2"	3'-0"	2'-6"	9"	#7	6"	#5	6"	162.29	0.721
13'-0"	6'-8"	3'-3"	2'-9"	11"	#7	6"	#5	6"	178.80	0.856
14'-0"	7'-2"	3'-6"	3'-0"	1'-0"	#8	6"	#5	6"	216.78	0.959
15'-0"	7'-8"	4'-0"	3'-0"	1'-1"	#9	6"	#6	6"	283.06	1.068
16'-0"	8'-2"	4'-0"	3'-0"	1'-3"	#9	6"	#6	6"	297.02	1.234

TABLE OF WINGWALL REINFORCING
(2-wings)

Bar	Size	No.	Spa
DL	#5	~	1'-0"
DS	#5	~	1'-0"
E	#4	~	1'-0"
F	#4	~	1'-0"
G	#6	4	~
H	#4	4	~
P	#4	~	1'-0"
RS	#5	3	~
RL	#5	3	~
V	#4	~	1'-0"

TABLE OF ESTIMATED CULVERT TOEWALL QUANTITIES

Bar	Size	No.	Spa
L	#4	~	1'-0"
Q	#4	1	~
Reinf (Lb/Ft)			2.45
Conc (CY/Ft)			0.037

WING DIMENSION FORMULAS:
(All values are in feet.)

He = H + T + C - 0.250
A = (He - 0.333'(SL)
B = (A) [tangent (θ = 15°)]
Lw = (A) ÷ [cosine (θ = 15°)]

For cast-in-place culverts:
Ltw = [(N) (S) + (N + 1) (U)] ÷ cosine θ

For precast culverts:
Ltw = [(N) (2U + S) + (N - 1) (0.5')] ÷ cosine θ

Total wingwall area (two wings ~ SF) = 0.5 (He + 0.333) (Lw + A)

He = Height of wingwall
SL:1 = Side slope ratio (horizontal:1 vertical)
A = Length of short wingwalls
Lw = Length of long wingwall
Ltw = Culvert toewall length
N = Number of culvert spans
θ = Culvert skew

See applicable box culvert standard sheet for H, S, T, and U values.

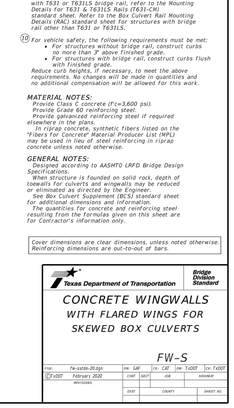
1. Extend Bars P 3'-0" minimum into bottom slab of box culvert.
2. Adjust as necessary to maintain 1 1#2" clear cover and 4" minimum between bars.
3. Quantities shown are based on an average wing height for two wings (one structure end). To determine total quantities for two wings, multiply the tabulated values by 0.5 x (A + Lw).
4. Recommended values of side slope are: 2:1, 3:1, 4:1, and 6:1.
5. When shown elsewhere on the plans, construct 5" deep concrete riprap. Payment for riprap is as required by Item 432, "Riprap". Unless otherwise shown on the plans or directed by the Engineer, construct riprap 4'-0" wide, measured from the concrete toewall along all edges of the riprap adjacent to natural ground; reinforce the toewall by extending typical riprap reinforcing into the toewall; and extend construction joints or grooved joints oriented in the direction of flow across the full distance of the riprap at intervals of approximately 20'. When such riprap is provided, the culvert toewall shown in SECTION B-B will not be required.
6. At Contractor's option, culvert toewall may be ended flush with wingwall toewall. Adjust reinforcing as needed.
7. Applicable values of skew are: 15°, 30°, and 45°.
8. Typical wingwall angle for all skews.
9. 0" Min to 5'-0" Max. Estimated curb heights are shown elsewhere in the plans. For structures with pedestrian rail or curbs taller than 1'-0, refer to the Extended Curb Details (ECD) standard sheet. For structures with T631 or T631LS bridge rail, refer to the Mounting Details for T631 & T631LS Rails (T631-CM) standard sheet. Refer to the Box Culvert Rail Mounting Details (RAC) standard sheet for structures with bridge rail other than T631 or T631LS.
10. For vehicle safety, the following requirements must be met:
    - For structures without bridge rail, construct curbs no more than 3" above finished grade.
    - For structures with bridge rail, construct curbs flush with finished grade.

    Reduce curb heights, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.

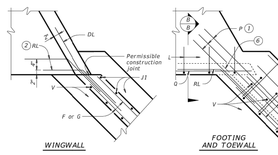
MATERIAL NOTES:
Provide Class C concrete (f'c=3,600 psi).
Provide Grade 60 reinforcing steel.
Provide galvanized reinforcing steel if required elsewhere in the plans.
In riprap concrete, synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing in riprap concrete unless noted otherwise.

GENERAL NOTES:
Designed according to AASHTO LRFD Bridge Design Specifications.
When structure is founded on solid rock, depth of toewalls for culverts and wingwalls may be reduced or eliminated as directed by the Engineer.
See Box Culvert Supplement (BCS) standard sheet for additional dimensions and information.
The quantities for concrete and reinforcing steel resulting from the formulas given on this sheet are for Contractor's information only.

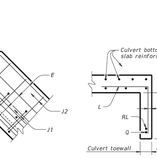
Cover dimensions are clear dimensions, unless noted otherwise. Reinforcing dimensions are out-to-out of bars.



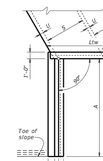
INSIDE ELEVATION
(Showing reinforcing. Culvert and culvert toewall reinforcing not shown for clarity.)



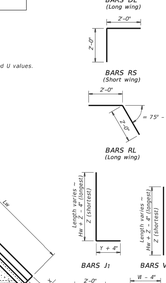
WINGWALL
CORNER DETAILS
(Culvert and culvert toewall reinforcing not shown for clarity.)

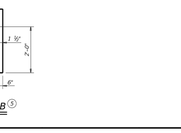


FOOTING AND TOEWALL



PLAN
(Showing dimensions and 30° skew.)





SECTION B-B (5)

Texas Department of Transportation — Bridge Division Standard

CONCRETE WINGWALLS
WITH FLARED WINGS FOR
SKEWED BOX CULVERTS

FW-S

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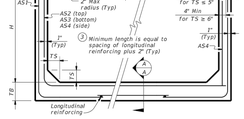
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BOX DATA

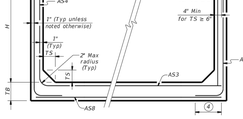
SECTION DIMENSIONS: S (Ft.)	H (Ft.)	TT (in.)	TB (in.)	TS (in.)	Fill Height (Ft.)	M (Min) (in.)	REINFORCING (sq. in. / Ft.) (2): AS1	AS2	AS3	AS4	AS5	AS7	AS8	(1) Lift Weight (tons)
5	2	8	7	6	< 2	--	0.19	0.27	0.18	0.14	0.19	0.19	0.17	6.0
5	2	6	6	6	2 < 3	44	0.22	0.20	0.16	0.14	--	--	--	5.1
5	2	6	6	6	3 - 5	44	0.16	0.14	0.14	0.14	--	--	--	5.1
5	2	6	6	6	10	36	0.15	0.14	0.14	0.14	--	--	--	5.1
5	2	6	6	6	15	36	0.20	0.18	0.18	0.14	--	--	--	5.1
5	2	6	6	6	20	36	0.26	0.23	0.24	0.14	--	--	--	5.1
5	2	6	6	6	25	36	0.33	0.29	0.29	0.14	--	--	--	5.1
5	2	6	6	6	30	36	0.39	0.34	0.35	0.14	--	--	--	5.1
5	3	8	7	6	< 2	--	0.19	0.31	0.21	0.14	0.19	0.19	0.17	6.6
5	3	6	6	6	2 < 3	45	0.18	0.24	0.19	0.14	--	--	--	5.7
5	3	6	6	6	3 - 5	36	0.14	0.17	0.16	0.14	--	--	--	5.7
5	3	6	6	6	10	36	0.14	0.16	0.17	0.14	--	--	--	5.7
5	3	6	6	6	15	35	0.16	0.21	0.22	0.14	--	--	--	5.7
5	3	6	6	6	20	35	0.21	0.27	0.28	0.14	--	--	--	5.7
5	3	6	6	6	25	35	0.26	0.34	0.34	0.14	--	--	--	5.7
5	3	6	6	6	30	35	0.31	0.41	0.41	0.14	--	--	--	5.7
5	4	8	7	6	< 2	--	0.19	0.33	0.24	0.14	0.19	0.19	0.17	7.2
5	4	6	6	6	2 < 3	45	0.16	0.27	0.22	0.14	--	--	--	6.3
5	4	6	6	6	3 - 5	45	0.14	0.19	0.18	0.14	--	--	--	6.3
5	4	6	6	6	10	36	0.14	0.18	0.18	0.14	--	--	--	6.3
5	4	6	6	6	15	35	0.14	0.23	0.24	0.14	--	--	--	6.3
5	4	6	6	6	20	35	0.17	0.30	0.31	0.14	--	--	--	6.3
5	4	6	6	6	25	35	0.21	0.37	0.38	0.14	--	--	--	6.3
5	4	6	6	6	30	35	0.25	0.44	0.45	0.14	--	--	--	6.3
5	5	8	7	6	< 2	--	0.19	0.35	0.26	0.14	0.19	0.19	0.17	7.8
5	5	6	6	6	2 < 3	45	0.14	0.29	0.24	0.14	--	--	--	6.9
5	5	6	6	6	3 - 5	45	0.14	0.21	0.20	0.14	--	--	--	6.9
5	5	6	6	6	10	45	0.14	0.19	0.20	0.14	--	--	--	6.9
5	5	6	6	6	15	36	0.14	0.24	0.25	0.14	--	--	--	6.9
5	5	6	6	6	20	35	0.15	0.31	0.32	0.14	--	--	--	6.9
5	5	6	6	6	25	35	0.18	0.38	0.39	0.14	--	--	--	6.9
5	5	6	6	6	30	35	0.21	0.46	0.47	0.14	--	--	--	6.9

(1) For box length = 8'-0"
(2) AS1 thru AS4, AS7 and AS8 are minimum required areas of reinforcement per linear foot of box length. AS5 is minimum required area of reinforcement per linear foot of box width.



CORNER OPTION "A"
CORNER OPTION "B"

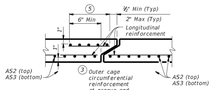
FILL HEIGHT 2 FT AND GREATER



CORNER OPTION "A"
CORNER OPTION "B"

FILL HEIGHT LESS THAN 2 FT

(4) Length is equal to spacing of longitudinal reinforcing plus 2". (10" Min) (Typ)



SECTION A-A
(Showing top and bottom slab joint reinforcement.)

MATERIAL NOTES:
Provide 0.03 sq. in./ft. minimum longitudinal reinforcement at each face in slabs and walls. This minimum requirement may be met by the transverse wires when wire mesh reinforcement is used.
Provide Class H concrete (f'c = 5,000 psi).

GENERAL NOTES:
Designs shown conform to ASTM C1577. Refer to ASTM C1577 for information on details not shown.
See Box Culverts Precast Miscellaneous Details (SCP-MD) standard sheet for details and notes not shown.
Unless noted otherwise on the plans or on this sheet, the contractor may furnish an alternate design that is equal to or exceeds the box design for the design fill height in the table. Submit shop plans for alternate designs in accordance with Item "Precast Concrete Structural Members (Fabrication)".

HL93 LOADING

Texas Department of Transportation — Bridge Division Standard

SINGLE BOX CULVERTS
PRECAST
5'-0" SPAN

SCP-5

file: sc605ms-20.dgn	dn: TxDOT	ck: TxDOT	dw: TxDOT	ck: TxDOT
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2701 EAST ROSEMARY PKWY SOUTH, SUITE 400, CLEVELAND, TEXAS 77566
936.588.7676 | WWW.BRWARCHITECTS.COM

GESSNER ENGINEERING
Corporate Office
2501 Ashford Drive
College Station, Texas 77845
www.gessnerengineering.com
FIRM REGISTRATION NUMBER: TBPE F-7451, TBPLSF-10059310

STATE OF TEXAS — JEREMY N. PETERS — 100217 — LICENSED PROFESSIONAL ENGINEER — 11/22

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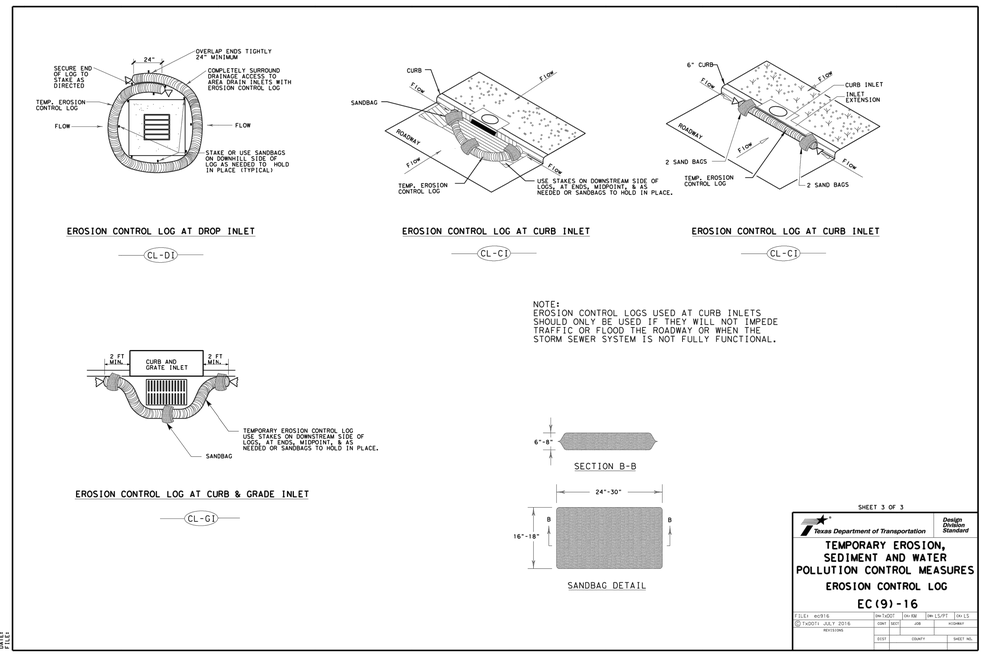
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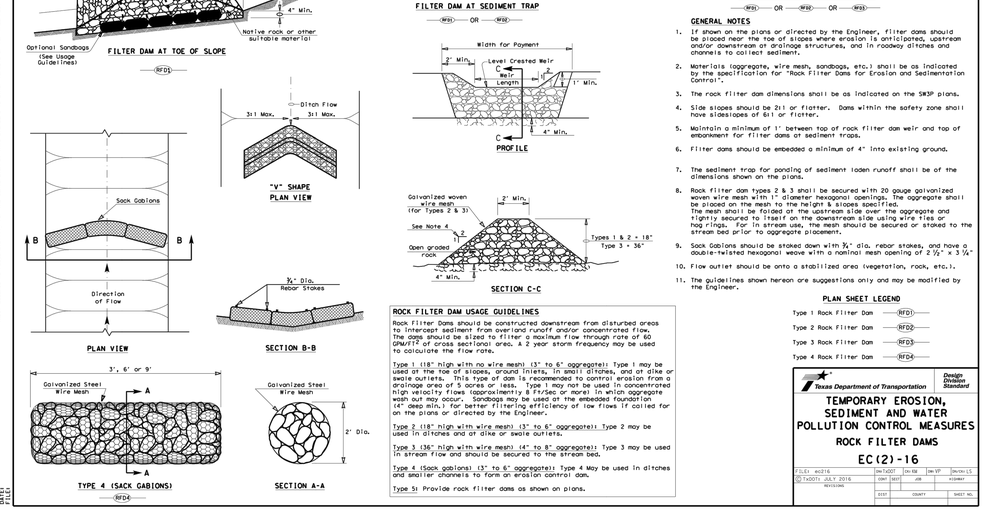
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353 & 357 FM 306
NEW BRAUNFELS, TX 78130

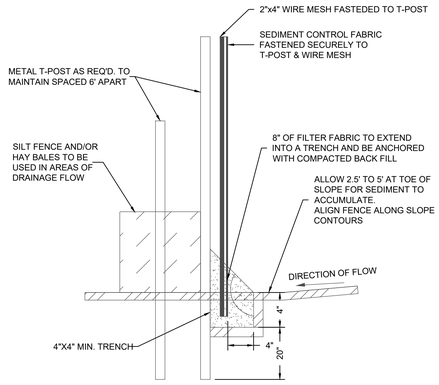
NO.	REVISION	DATE

100% CD

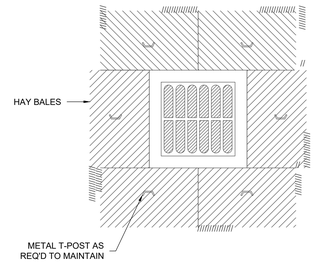
C10.4
DETAILS





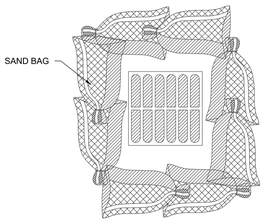


SILT FENCE ASSEMBLY
NTS

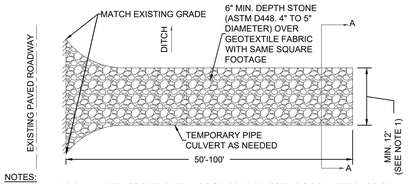


NOTE:
TEMPORARY DEVICES AT DITCHES ARE USED TO DETAIN AND/OR FILTER SEDIMENT-LADEN RUNOFF. THE PROTECTION ALLOWS SEDIMENT TO SETTLE PRIOR TO DISCHARGE INTO A STORM DRAIN INLET OR CATCH BASIN.

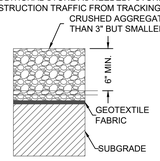
HAY BAIL DETAIL
NTS



NOTE:
TEMPORARY DEVICES AROUND STORM DRAINS ARE USED TO DETAIN AND/OR FILTER SEDIMENT-LADEN RUNOFF. THE PROTECTION ALLOWS SEDIMENT TO SETTLE PRIOR TO DISCHARGE INTO A STORM DRAIN INLET OR CATCH BASIN. SAND BAGS SHALL BE UV RESISTANT AND MUST NOT DEGRADE DUE TO ATMOSPHERIC CONDITIONS. SAND BAGS SHALL BE REPLACED UPON FIRST SIGN OF DETERIORATION.

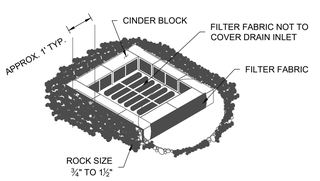


NOTES:
1. SHALL BE FULL WIDTH OF SITE ENTRANCE OR FOUR TIMES THE CIRCUMFERENCE OF THE LARGEST CONSTRUCTION VEHICLE TIRE, WHICHEVER IS GREATER.
2. CONSTRUCT SEDIMENT BARRIER AND CHANNELIZE RUNOFF TO SEDIMENT TRAPPING DEVICE.
3. DRESS WITH ADDITIONAL STONE AS NEEDED. STONE IS TO BE MAINTAINED SO AS TO PREVENT CONSTRUCTION TRAFFIC FROM TRACKING MUD ONTO ADJACENT PUBLIC STREETS.

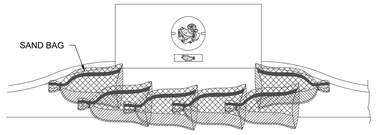


SECTION A-A

CONSTRUCTION ENTRANCE
NTS



STORM DRAIN INLET PROTECTION
NTS



NOTE:
TEMPORARY DEVICES AROUND STORM DRAINS ARE USED TO DETAIN AND/OR FILTER SEDIMENT-LADEN RUNOFF. THE PROTECTION ALLOWS SEDIMENT TO SETTLE PRIOR TO DISCHARGE INTO A STORM DRAIN INLET OR CATCH BASIN. SAND BAGS SHALL BE UV RESISTANT AND MUST NOT DEGRADE DUE TO ATMOSPHERIC CONDITIONS. SAND BAGS SHALL BE REPLACED UPON FIRST SIGN OF DETERIORATION.

NOTE:
POST A SIGN READING "CONCRETE WASH OUT PIT" NEXT TO THE PIT.

VERBALLY INSTRUCT THE CONCRETE TRUCK DRIVERS WHERE THE PIT IS AND TO WASH OUT THEIR TRUCKS IN THE PIT AND NO WHERE ELSE.

EXCESS CONCRETE IS NOT ALLOWER TO BE DUMPED ON-SITE. EXCEPT IN DESIGNATED TEMPORARY CONCRETE WASHOUT PIT AREAS.

ON-SITE TEMPORARY CONCRETE WASHOUT AREAS WILL BE LOCATED AT LEAST 50 FEET FROM STORM DRAINS, OPEN DITCHES, OR WATER BODIES AS DETERMINED IN THE FIELD.

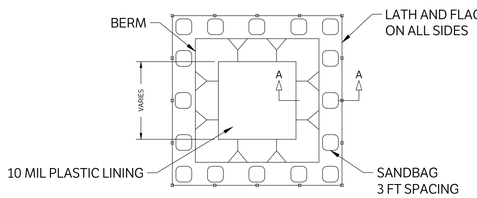
TEMPORARY CONCRETE WASHOUT FACILITIES WILL BE CONSTRUCTED AND MAINTAINED IN SUFFICIENT QUANTITY AND SIZE TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS.

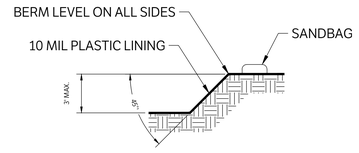
WASHOUT FACILITIES WILL BE CLEANED OUT OR REPLACED ONCE THE WASHOUT IS 75% FULL.

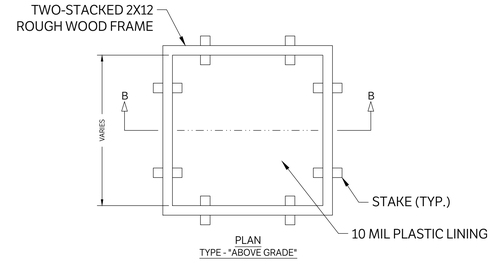
PLASTIC LINING MATERIAL WILL BE MINIMUM OF 10 MIL POLYETHYLENE SHEETING AND WILL BE FREE OF HOLES, TEARS, OR OTHER DEFECTS.

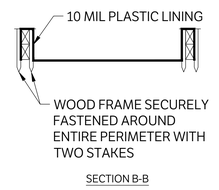
WHEN WASHOUT FACILITIES ARE NO LONGER REQUIRED FOR WORK, THE HARDENED CONCRETE WILL BE REMOVED AND DISPOSED OF OFFSITE. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES WILL BE REMOVED FROM THE SITE AND DISPOSED OF. BELOW GRADE PITS SHALL BE FILLED WITH CLEAN FILL MATERIAL AND COMPACTED TO IN-SITU CONDITIONS, OR AS DIRECTED BY THE PROJECT SPECIFICATIONS.

CONSTRUCT ENTRY ROAD AND BOTTOM OF WASHOUT AREA TO SUPPORT EXPECTED LOADINGS FROM TRUCK EQUIPMENT.









CONCRETE WASHOUT DETAIL
NTS

BROWN REYNOLDS WATFORD ARCHITECTS
2705 BEE CAVE ROAD, BUILDING I, SUITE 220, AUSTIN, TEXAS 78746
512.328.0011
WWW.BRWARCHITECTS.COM
BRW
STATE OF TEXAS
JEREMY N. PETERS
100217
LICENSED PROFESSIONAL ENGINEER
11/11/22
GESSNER ENGINEERING
Corporate Office
2501 Ashford Drive
College Station, Texas 77840
www.gessnerengineering.com
TBPE REGISTRATION NUMBER: F-7451, TBPLS F-10053910
GESSNER ENGINEERING

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DATE 11/01/2022
DRAWN BY NF
CHECKED BY JP
BRW PROJECT NUMBER

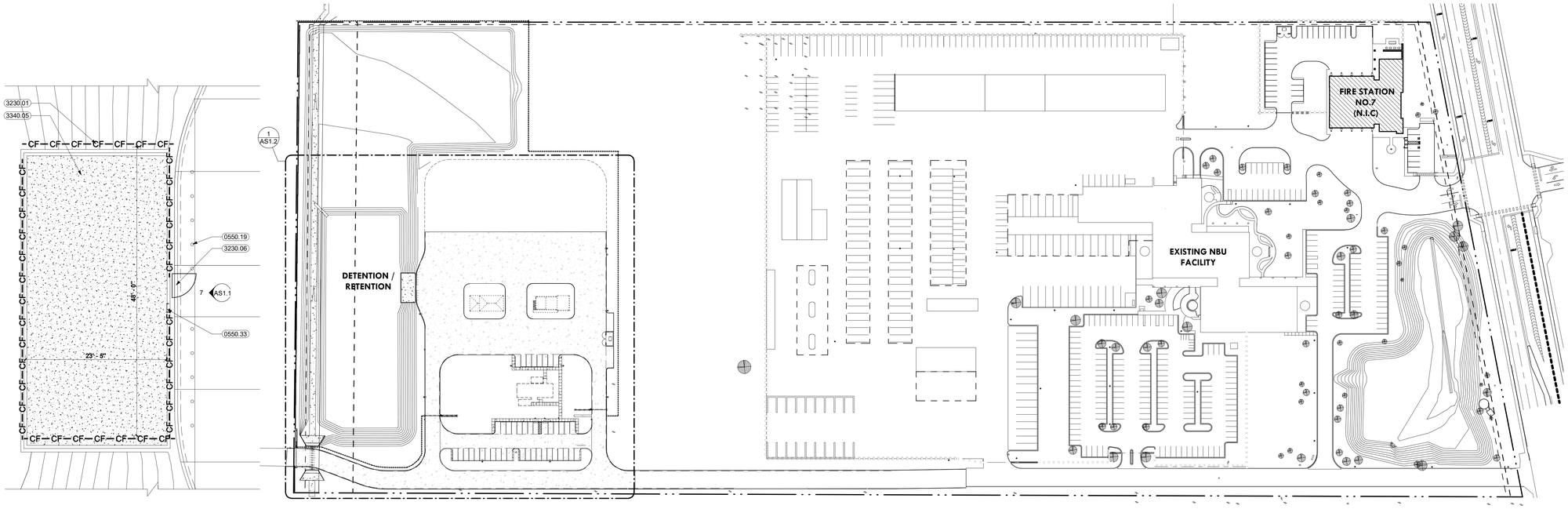
NEW BRAUNFELS TRAINING FACILITY
353 & 357 FM 306
NEW BRAUNFELS, TX 78130

NO.	REVISION	DATE

100% CD

C10.5

EROSION CONTROL DETAILS



KEYNOTES

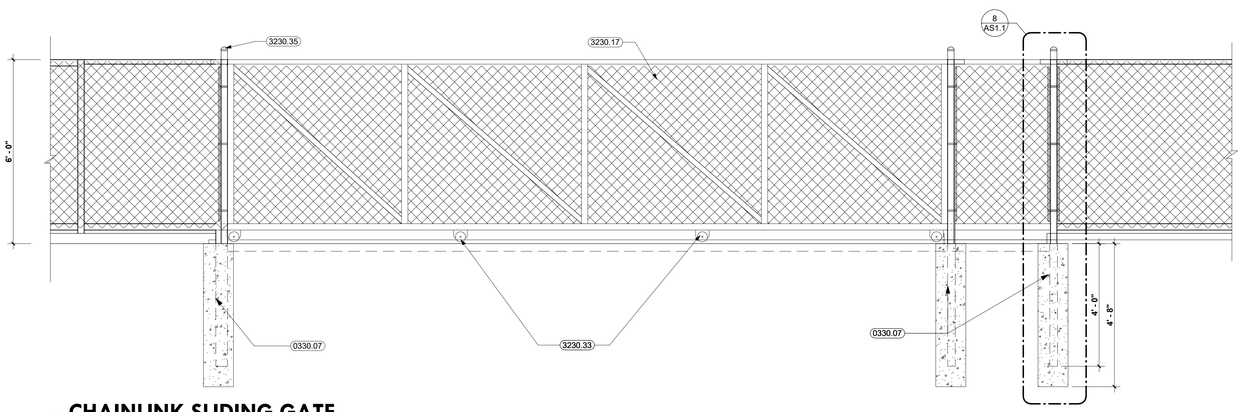
0330.07	CONCRETE FOOTING (RE: STRUCTURAL)
0550.19	6" PIPE BOLLARD. FILL WITH CONCRETE
0550.33	METAL LADDER
0870.12	PANIC HARDWARE DEVICE
2810.09	SLIDING GATE OPERATOR
3210.30	6" CONCRETE CURB (WITH GUTTER AS REQUIRED) (RE: CIVIL)
3230.01	6'-0" NOM. CHAIN-LINK FENCE
3230.06	4'-0" WIDE CHAIN-LINK GATE
3230.10	2 1/2" DIAMETER SCHEDULE 40 STEEL PIPE (GALVANIZED)
3230.11	6 5/8" DIAMETER STEEL PIPE (GALVANIZED)
3230.17	CHAIN-LINK FABRIC (VINYL COATED)
3230.28	HEAVY DUTY OFFSET TYPE HINGES
3230.33	GATE ROLLER
3230.35	POST CAP
3230.56	VEHICLE DETECTION LOOP
3340.05	CONCRETE CATCH BASIN (RE: CIVIL)

2 ENLARGED DRAFT TANK
1/8" = 1'-0"

0 4' 8' 16'

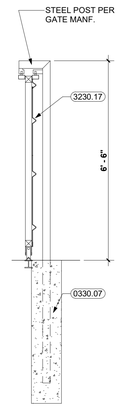
PLAN NORTH / TRUE NORTH

1 OVERALL SITE PLAN
1" = 80'-0"



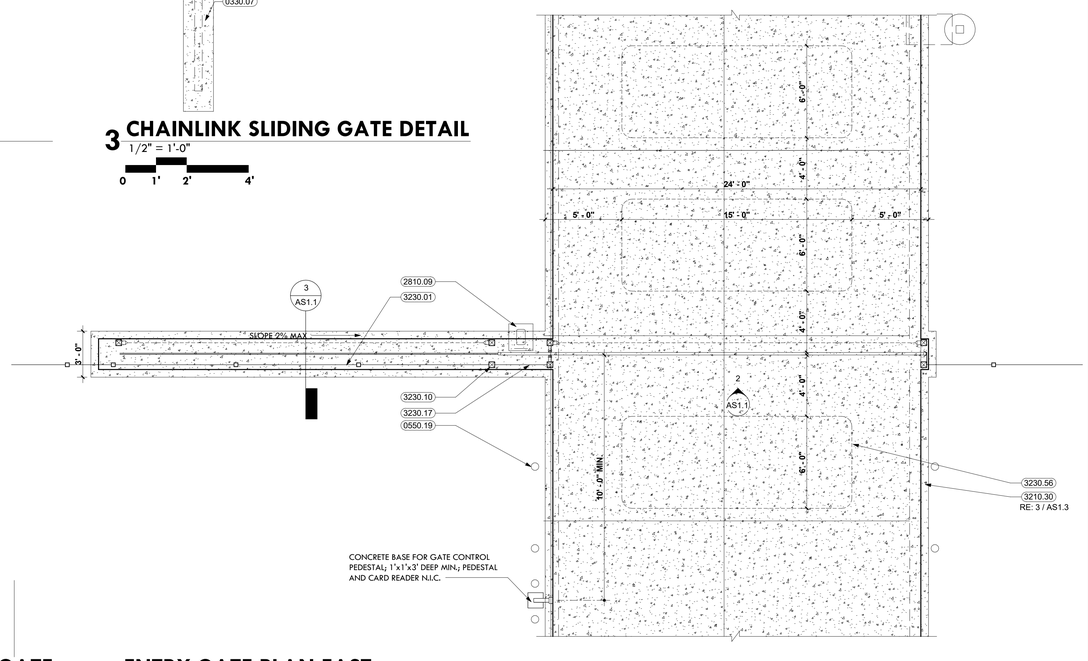
4 CHAINLINK SLIDING GATE
1/2" = 1'-0"

0 1' 2' 4'



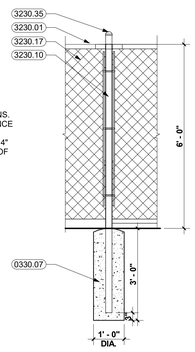
3 CHAINLINK SLIDING GATE DETAIL
1/2" = 1'-0"

0 1' 2' 4'



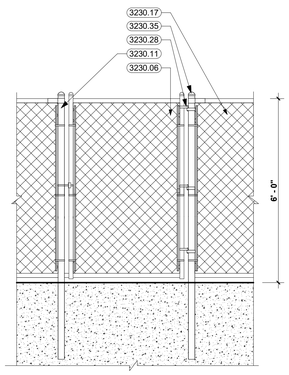
NOTES:

1. WELD ALL PIPE CONNECTIONS.
2. GATE FABRIC TO MATCH FENCE FABRIC.
3. NOTCH CURBS TO MAINTAIN 4" HEIGHT BETWEEN BOTTOM OF GATE AND PAVING.
4. PROVIDE GATE KEEPERS.



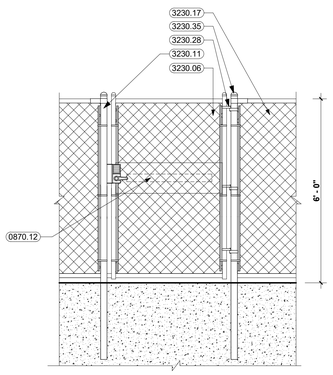
8 CHAINLINK FENCE, TYP.
1/2" = 1'-0"

0 1' 2' 4'



7 CHAINLINK SWINGING GATE
1/2" = 1'-0"

0 1' 2' 4'



6 CHAINLINK LOCKABLE SWINGING GATE
1/2" = 1'-0"

0 1' 2' 4'

5 ENTRY GATE PLAN EAST
1/4" = 1'-0"

0 2' 4' 8'

BROWN REYNOLDS WATFORD ARCHITECTS
175 CENTURY SQUARE DRIVE
SUITE 330
COLLEGE STATION, TEXAS 77840
979.693.1779
WWW.BRWARCH.COM

REGISTERED ARCHITECT RAY W. HOLLIDAY 18837 STATE OF TEXAS
11/01/2022

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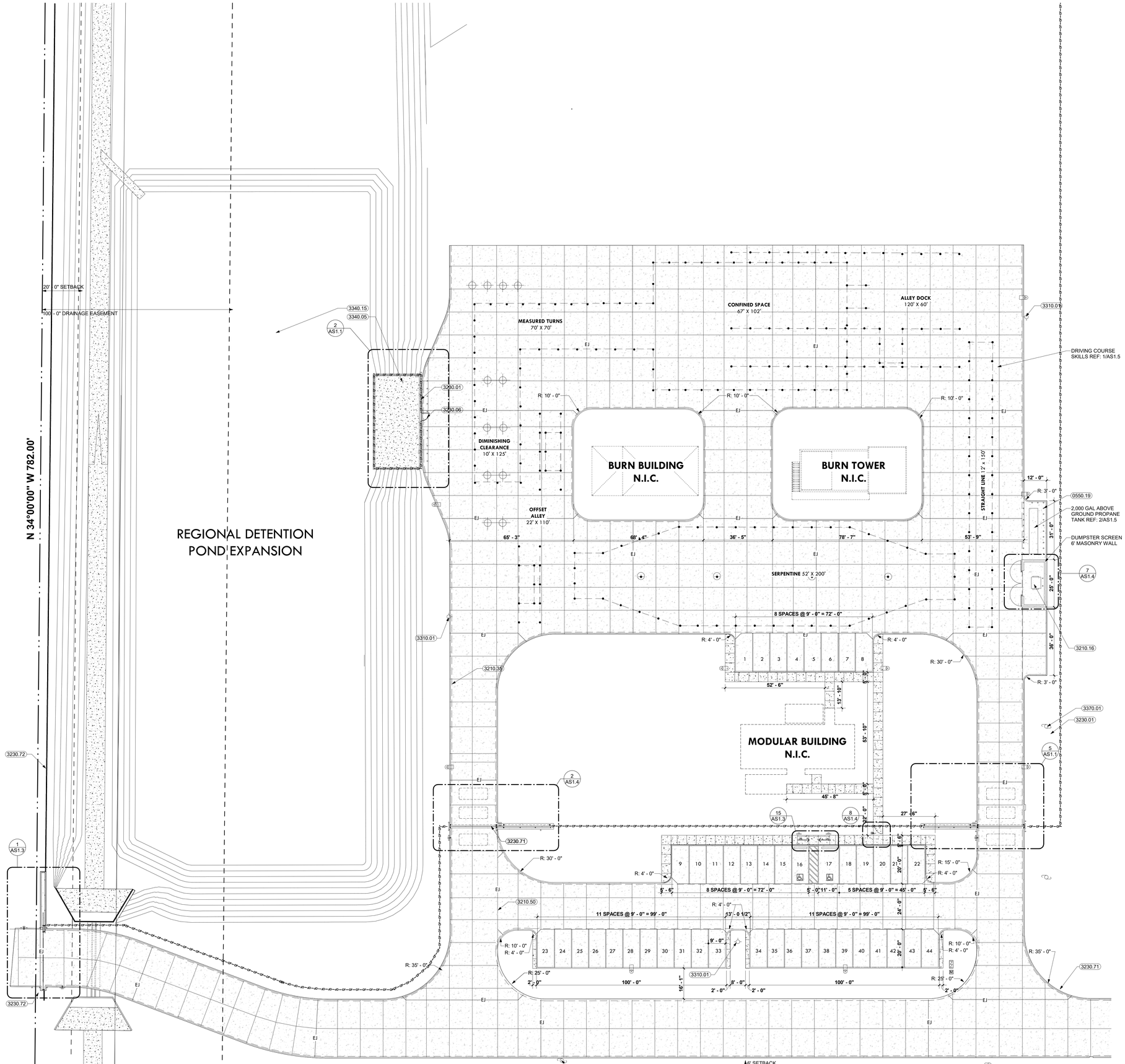
DATE	11/01/2022
DRAWN BY	HF, MH, DP
CHECKED BY	RH, MW
BRW PROJECT NUMBER	219065.00

NEW BRAUNFELS FIRE TRAINING SITE INFRASTRUCTURE
353 FM 306
NEW BRAUNFELS, TX 77130

NO.	REVISION	DATE

AS1.1

OVERALL SITE PLAN



KEYNOTES

0220.03	EXISTING POWER POLE
0550.19	6" PIPE BOLLARD. FILL WITH CONCRETE
3210.16	CONCRETE DUMPSTER PAD
3210.35	FIRE LANE STRIPING PER CITY REQUIREMENTS
3210.50	PAVING EXPANSION JOINT (RE: CIVIL)
3230.01	6'-0" NOM. CHAIN-LINK FENCE
3230.06	4'-0" WIDE CHAIN-LINK GATE
3230.71	MOTORIZED CHAIN LINK GATE
3230.72	PRECAST CONCRETE FENCE
3310.01	FIRE HYDRANT (RE: CIVIL / PLUMBING)
3340.05	CONCRETE CATCH BASIN (RE: CIVIL)
3340.15	STORM WATER DETENTION POND (RE: CIVIL)
3370.01	POWER POLE

PARKING SUMMARY

USE: BUSINESS

SQFT: 1,400

REQUIREMENT: OFFICE REQUIRES ONE FOR EACH 300 SQ. FT. OF GROSS FLOOR AREA.

PARKING SPACES REQUIRED: 5

PARKING SPACES PROVIDED: 42 & 2 ACCESSIBLE

PLAN NORTH / TRUE NORTH

1 ARCHITECTURAL SITE PLAN

1" = 20'-0"

0 10' 20' 40'

REGISTERED ARCHITECT RAY W. HOLLIDAY 18837 STATE OF TEXAS

11/01/2022

BROWN REYNOLDS WATFORD ARCHITECTS
175 CENTURY SQUARE DRIVE
SUITE 330
COLLEGE STATION, TEXAS 77840
979.694.1779
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DATE 11/01/2022

DRAWN BY HF, MH, DP

CHECKED BY RH, MW

BRW PROJECT NUMBER 219065.00

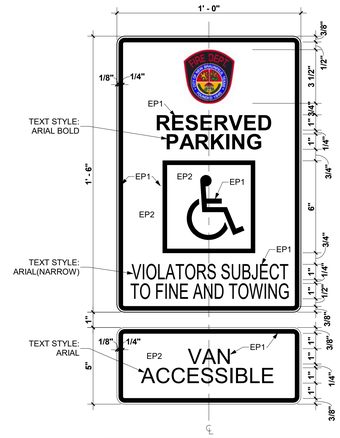
NEW BRAUNFELS FIRE TRAINING SITE INFRASTRUCTURE

353 FM 306
NEW BRAUNFELS, TX 77130

NO.	REVISION	DATE

AS1.2

ARCHITECTURAL SITE PLAN



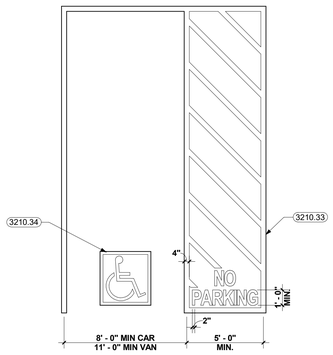
NOTE: 12" X 18" HEAVY DUTY 18GA. STEEL SIGN. SIGN IS 3/64" THICK AND SPRAYED WITH AN EGGSHELL FINISH POWDER COATED PAINT AND BAKED ON.

VAN ACCESSIBLE WHERE NOTED.

RE: LEGEND ON SHEET AS1.4 FOR COLORS

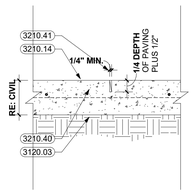
4 ACCESS. SIGN DETAIL
3" = 1'-0"

NOTE: TEXT TO BE CENTERED ON WIDTH OF ACCESS AISLE LINES AND TEXT ARE REQUIRED TO CONTRAST W/ BACKGROUND



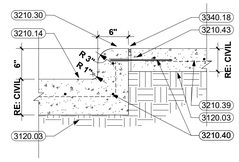
9 ACESSIBLE PARKING DETAIL
1/4" = 1'-0"

0 2' 4' 8'

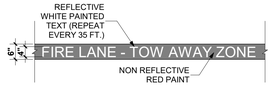


3 CONTROL JOINT
1 1/2" = 1'-0"

0 6" 1' 2'

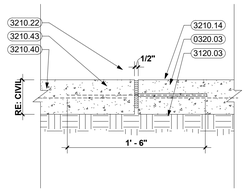


2 CURB DETAIL
1" = 1'-0"



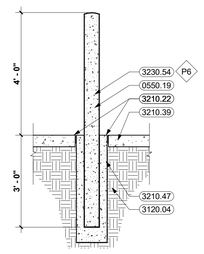
6 FIRE LANE STRIPING
1/2" = 1'-0"

0 1' 2' 4'



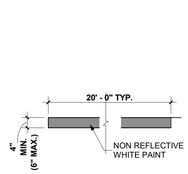
5 EXPANSION JOINT
1 1/2" = 1'-0"

0 6" 1' 2'



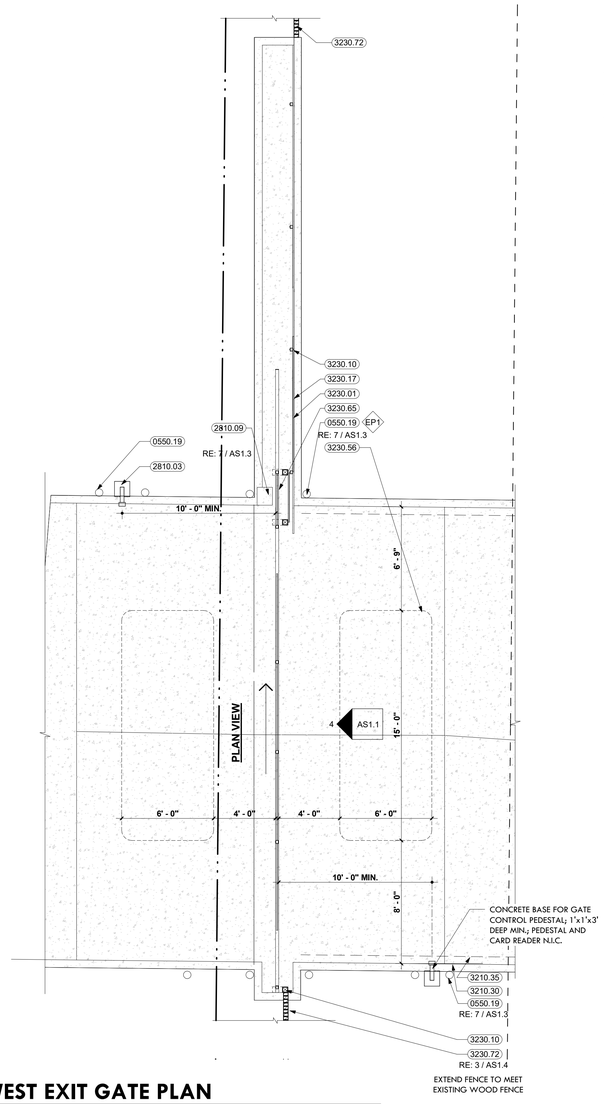
7 PIPE BOLLARD
1/2" = 1'-0"

0 1' 2' 4'



8 PAVEMENT MARKING
1/2" = 1'-0"

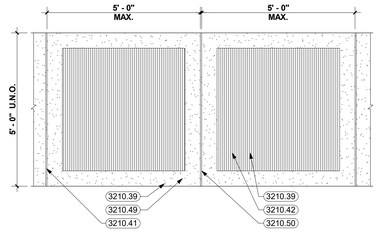
0 1' 2' 4'



PLAN NORTH TRUE NORTH

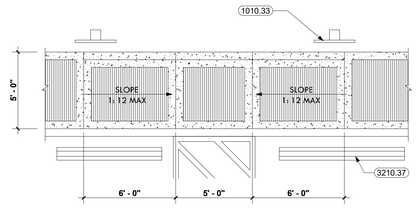
1 WEST EXIT GATE PLAN
1/4" = 1'-0"

0 2' 4' 8'



10 TYPICAL SIDEWALK PLAN
1/2" = 1'-0"

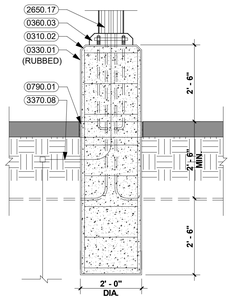
0 2' 4' 8'



PLAN NORTH TRUE NORTH

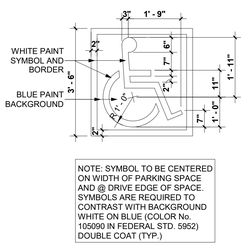
15 DUAL CURB RAMP
1/4" = 1'-0"

0 2' 4' 8'



14 LIGHT POLE BASE
1/2" = 1'-0"

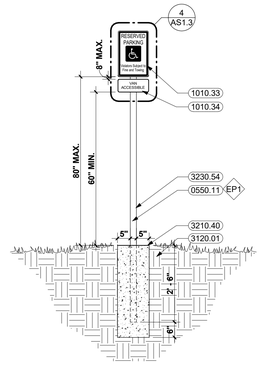
0 1' 2' 4'



NOTE: SYMBOL TO BE CENTERED ON WIDTH OF PARKING SPACE AND @ DRIVE EDGE OF SPACE. SYMBOLS ARE REQUIRED TO CONTRAST WITH BACKGROUND WHITE ON BLUE (COLOR No. 105090 IN FEDERAL STD. 5952) DOUBLE COAT (TYP.)

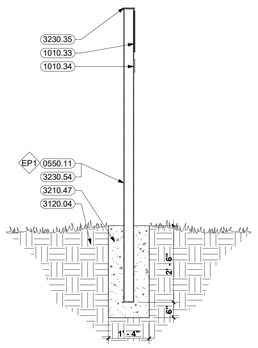
ACCESSIBLE 13 PAVEMENT MARKING
1/2" = 1'-0"

0 1' 2' 4'



12 ACCESSIBLE SIGN DETAIL
1/2" = 1'-0"

0 1' 2' 4'



ACCESSIBLE 11 POLE MOUNTED SIGNAGE
1/2" = 1'-0"

0 1' 2' 4'

KEYNOTES

0310.02	3/4" CHAMFER
0320.03	DOWEL SLEEVE AND END CAP
0330.01	CONCRETE (RE: STRUCTURAL)
0360.03	FILL WITH GROUT
0550.11	4" X 4" X 1/4" STEEL TUBE
0550.19	6" PIPE BOLLARD. FILL WITH CONCRETE
0790.01	SEALANT WITH BACKER ROD AS REQUIRED
1010.33	POLE MOUNTED SIGNAGE - "RESERVED PARKING" (RE: 3/AC1.2)
1010.34	POLE MOUNTED SIGNAGE - "VAN-ACCESSIBLE" (RE: 3/AC1.2)
2650.17	LIGHT POLE / FIXTURE ON CONCRETE BASE
2810.03	CARD READER
2810.09	SLIDING GATE OPERATOR
3120.01	GRADE
3120.03	COMPACTED SUBGRADE
3120.04	EARTH
3210.14	CONCRETE PAVING (RE: CIVIL)
3210.22	PAVING EXPANSION JOINT - FILL WITH JOINT SEALER 1/4" BELOW SURFACE
3210.30	6" CONCRETE CURB (WITH GUTTER AS REQUIRED) (RE: CIVIL)
3210.33	4" PAVEMENT MARKING (DIAGONAL STRIPING AT 2'-0" O.C. TYPICAL)
3210.34	ACCESSIBLE PAVEMENT MARKING
3210.35	FIRE LANE STRIPING PER CITY REQUIREMENTS
3210.37	WHEEL STOP (6'-0" LONG). DRILL AND DOWEL INTO PAVING
3210.39	CONCRETE SIDEWALK (RE: CIVIL)
3210.40	STEEL REINFORCING (RE: CIVIL)
3210.41	SAW CUT CONTROL JOINT
3210.42	LIGHT BROOM FINISH
3210.43	3/4" DOWEL @ 12" O.C.
3210.47	CONCRETE
3210.49	STEEL TROWEL FINISH TYPICAL
3210.50	PAVING EXPANSION JOINT (RE: CIVIL)
3230.01	6'-0" NOM. CHAIN-LINK FENCE
3230.10	2 1/2" DIAMETER SCHEDULE 40 STEEL PIPE (GALVANIZED)
3230.17	CHAIN-LINK FABRIC (VINYL COATED)
3230.35	POST CAP
3230.54	POWDER COATING
3230.56	VEHICLE DETECTION LOOP
3230.65	EMBEDMENT STEEL SLEEVE
3230.72	PRECAST CONCRETE FENCE
3340.18	GEOTEXTILE; TURN UP AT EDGES
3370.08	BARE COPPER GROUND

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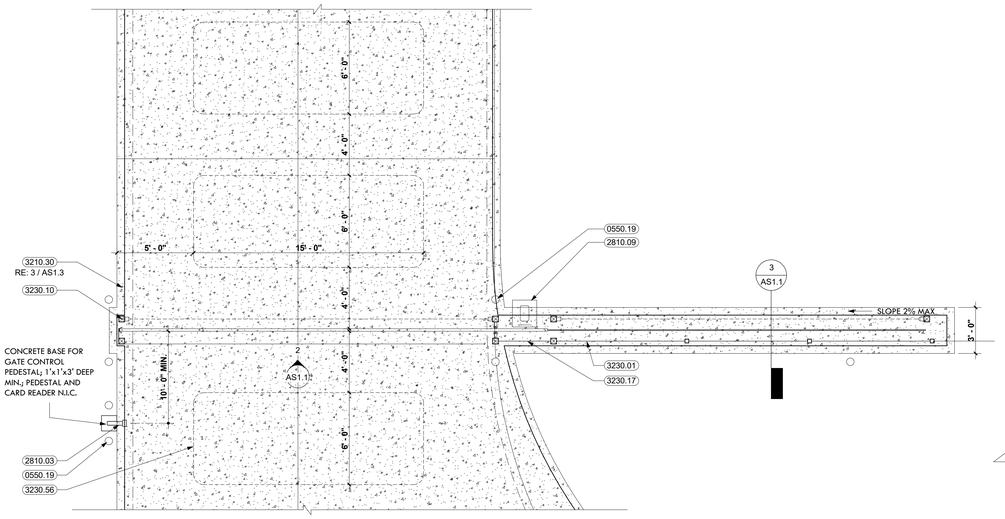
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CHECKED BY RH, MW
BRW PROJECT NUMBER 219065.00

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353 FM 306
NEW BRAUNFELS, TX 77130

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AS1.3

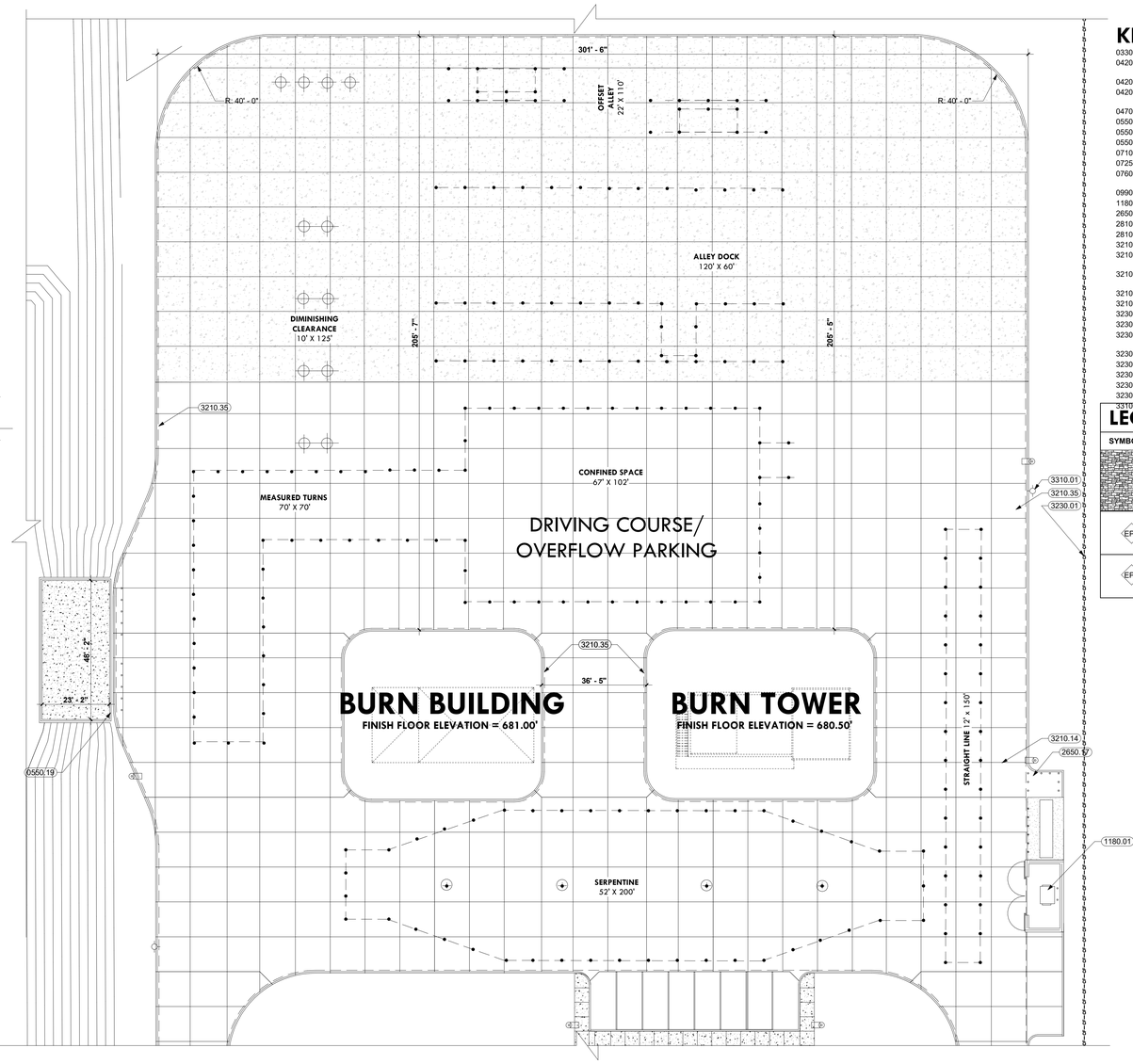
ARCHITECTURAL SITE PLAN & DETAILS



2 ENTRY GATE PLAN WEST

1/4" = 1'-0"

0 2' 4' 8'

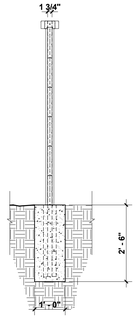


KEYNOTES

0330.05	CONCRETE GRADE BEAM (RE: STRUCTURAL)
0420.02	HORIZONTAL REINFORCING AT 16" O.C. VERTICALLY
0420.14	8" CONCRETE MASONRY UNITS
0420.24	VERTICAL REINFORCING IN CONCRETE MASONRY UNITS (RE: STRUCTURAL)
0470.06	CAST STONE CAP - PIN BOLT CONNECTIONS
0550.11	4" X 4" X 1/4" STEEL TUBE
0550.19	6" PIPE BOLLARD. FILL WITH CONCRETE
0550.78	3" X 3" SQUARE TUBING GATE FRAME
0710.01	BITUMINOUS DAMPPROOFING
0725.01	UNDERSLAB VAPOR BARRIER
0760.01	THROUGH-WALL FLASHING (WITH WEEPS AT 2'-0" O.C.) AND MORTAR NET
0990.02	ELASTOMERIC COATING
1180.01	DUMPSTER (N.I.C.)
2650.17	LIGHT POLE / FIXTURE ON CONCRETE BASE
2810.03	CARD READER
2810.09	SLIDING GATE OPERATOR
3210.14	CONCRETE PAVING (RE: CIVIL)
3210.30	6" CONCRETE CURB (WITH GUTTER AS REQUIRED) (RE: CIVIL)
3210.35	FIRE LANE STRIPING PER CITY REQUIREMENTS
3210.39	CONCRETE SIDEWALK (RE: CIVIL)
3210.40	STEEL REINFORCING (RE: CIVIL)
3230.01	6'-0" NOM. CHAIN-LINK FENCE
3230.06	4'-0" WIDE CHAIN-LINK GATE
3230.10	2 1/2" DIAMETER SCHEDULE 40 STEEL PIPE (GALVANIZED)
3230.17	CHAIN-LINK FABRIC (VINYL COATED)
3230.48	HEAVY DUTY METAL HINGES
3230.56	VEHICLE DETECTION LOOP
3230.64	CANE BOLT FROM 5/8" SS ROUND BAR
3230.65	EMBEDMENT STEEL SLEEVE
3310.01	FIRE HYDRANT (RE: CIVIL / PLUMBING)

LEGEND

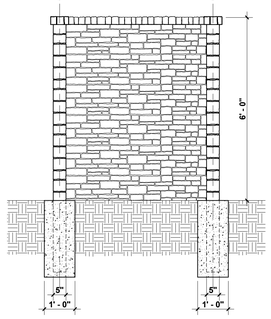
SYMBOL	DESCRIPTION
	LIMESTONE VENEER: CREAM & RUST BLEND CHOPPED FACE
EP1	SHERWIN WILLIAMS SW 6994 GREENBLACK
EP2	SHERWIN WILLIAMS SW 6182 ETHEREAL WHITE



4 PRECAST FENCE POST DETAIL

1/2" = 1'-0"

0 1' 2' 4'



3 PRECAST FENCE ELEVATION

1/2" = 1'-0"

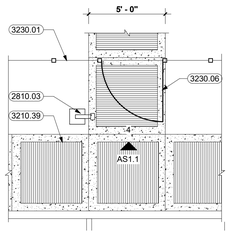
0 1' 2' 4'

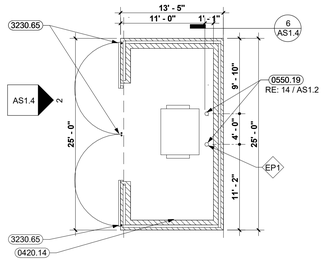
PLAN NORTH TRUE NORTH

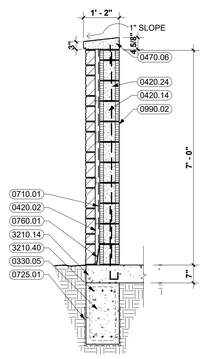
1 DRIVING COURSE SITE PLAN (ALTERNATE 2)

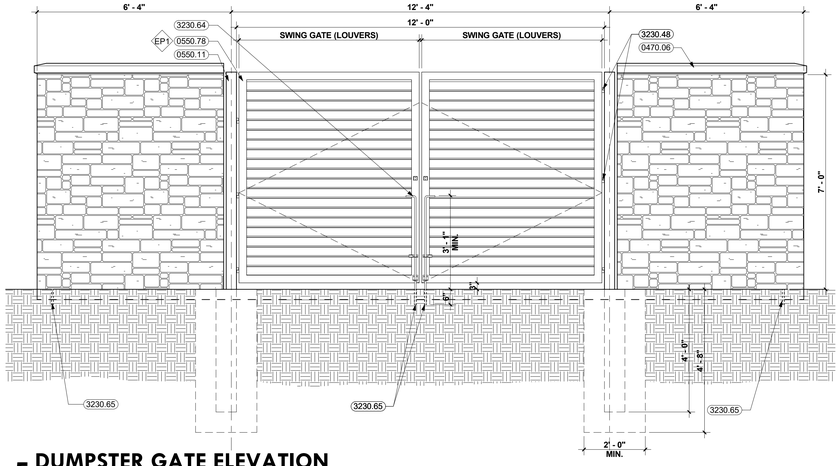
1" = 20'-0"

0 10' 20' 40'









PLAN NORTH TRUE NORTH

8 ENTRY MAN GATE PLAN

1/4" = 1'-0"

0 2' 4' 8'

PLAN NORTH TRUE NORTH

7 DUMPSTER SCREEN WALL PLAN

1/8" = 1'-0"

0 4' 8' 16'

6 SCREEN WALL DETAIL

1/2" = 1'-0"

0 1' 2' 4'

5 DUMPSTER GATE ELEVATION

1/2" = 1'-0"

0 1' 2' 4'

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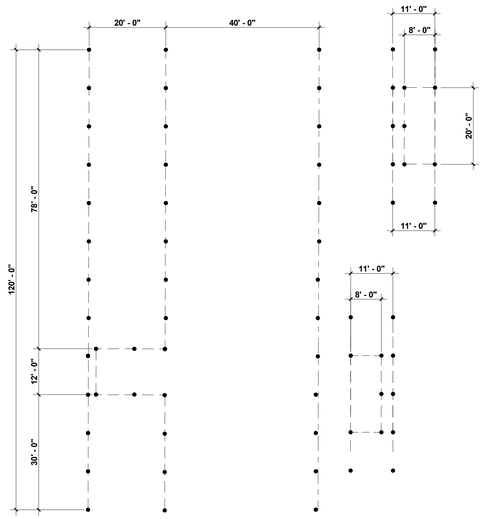
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CHECKED BY RH, MW
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ARCHITECTURAL SITE PLAN & DETAILS

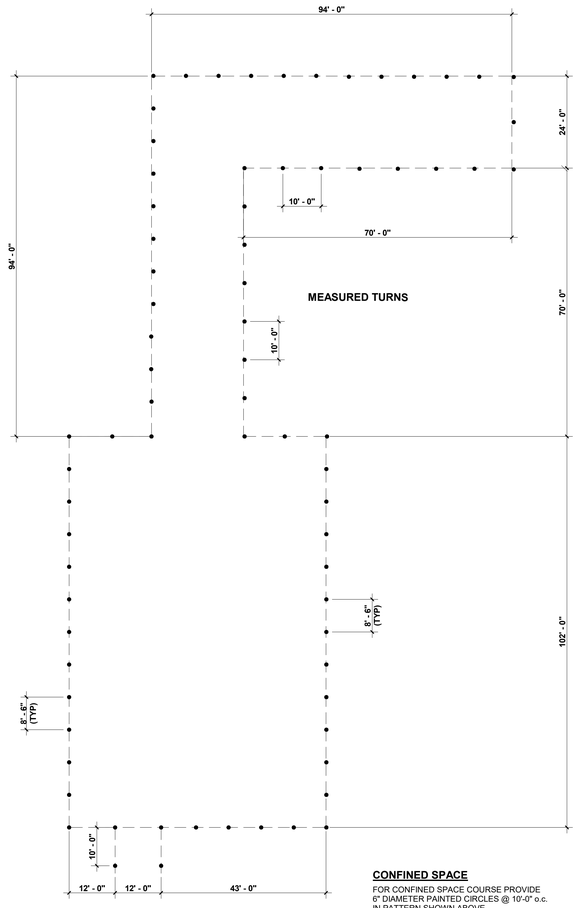


ALLEY DOCK

FOR ALLEY DOCK COURSE PROVIDE
6" DIAMETER PAINTED CIRCLES @ 10'-0" o.c.
IN PATTERN SHOWN ABOVE
SOLID CIRCLES, COLOR "ORANGE"

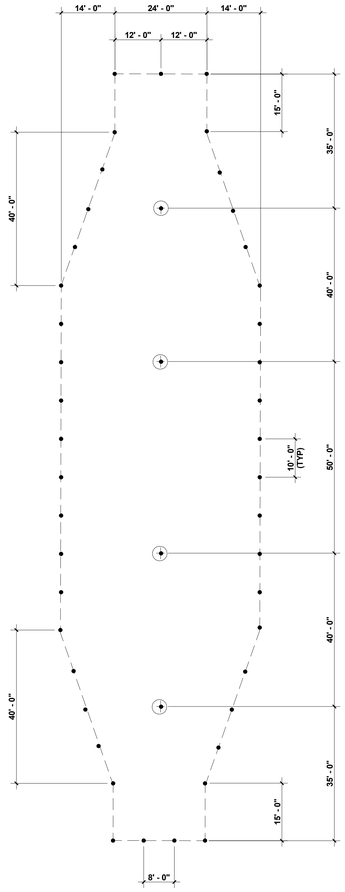
OFFSET ALLEY

FOR OFFSET ALLEY COURSE PROVIDE
6" DIAMETER PAINTED CIRCLES @ 10'-0" o.c.
IN PATTERN SHOWN ABOVE
SOLID CIRCLES, COLOR "RED"



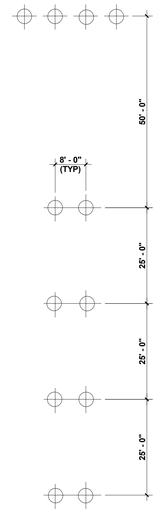
CONFINED SPACE

FOR CONFINED SPACE COURSE PROVIDE
6" DIAMETER PAINTED CIRCLES @ 10'-0" o.c.
IN PATTERN SHOWN ABOVE
SOLID CIRCLES, COLOR "BLUE"



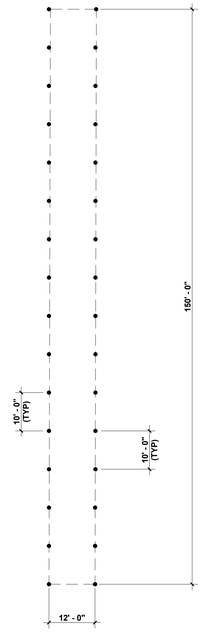
SERPENTINE

FOR SERPENTINE COURSE PROVIDE
6" DIAMETER PAINTED CIRCLES @ 10'-0" o.c.
IN PATTERN SHOWN ABOVE
SOLID CIRCLES, COLOR "GREEN"



DIMINISHING CLEARANCE

FOR DIMENISHING CLEARNACE COURSE
PROVIDE 6" DIAMETER PAINTED CIRCLES @
10'-0" o.c. IN PATTERN SHOWN ABOVE
SOLID CIRCLES, COLOR "YELLOW"

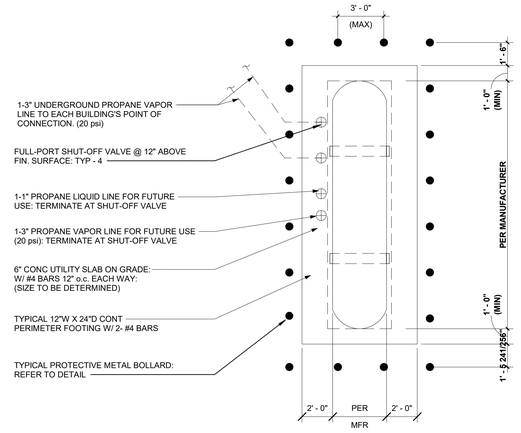


STRAIGHT LINE

FOR STRAIGHT LINE COURSE PROVIDE
6" DIAMETER PAINTED CIRCLES @ 10'-0" o.c.
IN PATTERN SHOWN ABOVE
SOLID CIRCLES, COLOR "BLACK"

1 DRIVING COURSE SKILLS

1/16" = 1'-0"



PROPANE TANK GENERAL NOTES

1. 2,000 GALLON PROPANE TANK TO BE PROVIDED AND INSTALLED BY GENERAL CONTRACTOR, INCLUDING ALL REQUIRED AGENCY PERMITS AND APPROVALS.
2. CONTRACTOR TO CONFIRM PHYSICAL TANK SIZE WITH PROVIDER PRIOR TO PLACEMENT OF SHOWN UTILITY PAD.
3. ONLY FULL-PORT SHUT-OFF VALVES AT POINTS OF TERMINATION FOR PROPANE LINES SHALL BE USED. SET SHUT-OFF VALVES INSIDE THE AREA OF UTILITY PAD.
4. CONCRETE PAD SHALL BE SLOPED TO DRAIN AT A MINIMUM OF 1/4" PER LINEAR FOOT. FINISHED SURFACE OF PAD TO BE 2" ABOVE ADJACENT GRADE: REFER TO CIVIL.
5. INSTALLATION OF UNDERGROUND POLYETHYLENE SUPPLY LINES SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE CURRENT EDITIONS OF THE IBC AND NFPA.
6. CONTRACTOR SHALL PROVIDE FINAL CONNECTION AND TESTING FROM ABOVE GROUND SHUT-OFF VALVES TO TANK PORTS UPON PLACEMENT OF TANK. PIPING SHALL BE AS FOLLOWS:
   A. FOR VAPOR LINES (TOP OF TANK) 3" DIAMETER SUPPLY.
   B. FOR LIQUID LINES (BOTTOM OF TANK) 1" DIAMATER SUPPLY.

2 PROPANE TANK

1/4" = 1'-0"

0 2' 4' 8'

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REGISTERED ARCHITECT
RAYNA HOLLIDAY
STATE OF TEXAS
11/01/2022

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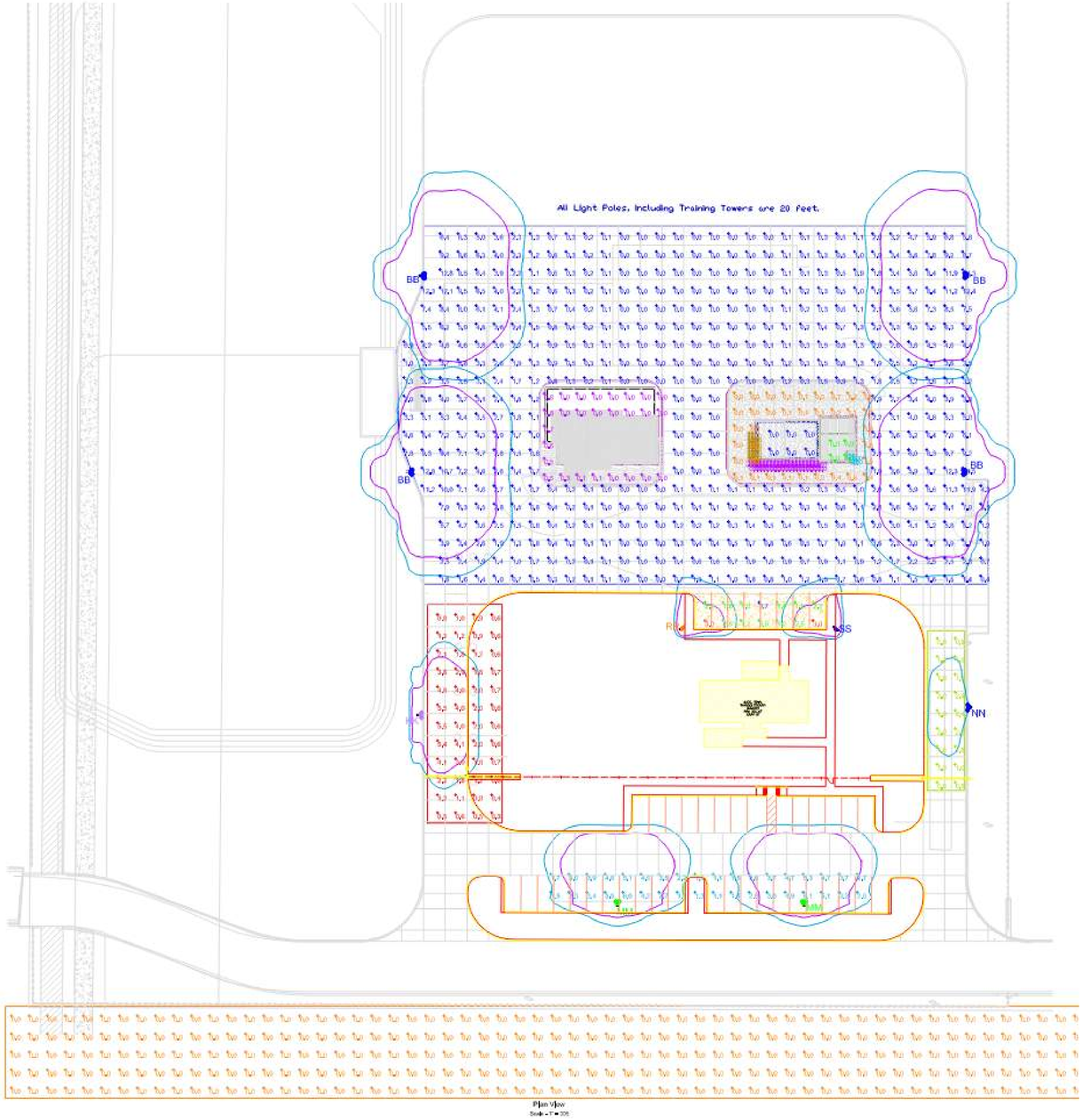
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BRW PROJECT NUMBER 219065.00

NEW BRAUNFELS FIRE TRAINING SITE INFRASTRUCTURE
353 FM 306
NEW BRAUNFELS, TX 77130

NO.	REVISION	DATE

AS1.5

ARCHITECTURAL SITE DETAILS



1 **OUTDOOR LIGHTING PLAN**
1" = 30'-0"

PLAN NORTH
TRUE NORTH

Statistics

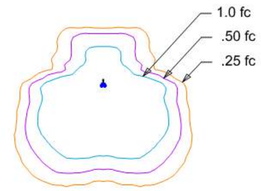
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
DRIVE - NARROW TO TOWER	+	1.5 fc	2.4 fc	0.5 fc	4.8:1	3.0:1
DRIVE - WIDE TO TOWER	+	1.9 fc	5.5 fc	0.3 fc	18.3:1	6.3:1
PARKING - NORTH	+	1.8 fc	3.0 fc	0.7 fc	4.3:1	2.6:1
PARKING - SOUTH LONG	+	3.3 fc	6.1 fc	1.1 fc	5.5:1	3.0:1
PROPERTY LINE - OUTSIDE	+	0.0 fc	0.0 fc	0.0 fc	N/A	N/A
RESIDENTIAL AREA	+	0.2 fc	0.8 fc	0.0 fc	N/A	N/A
TOWER 4TH FL DOOR	+	0.0 fc	0.0 fc	0.0 fc	N/A	N/A
TOWER 5TH FL DECK	+	0.0 fc	0.0 fc	0.0 fc	N/A	N/A
TOWER PARAPET DECK	+	0.0 fc	0.0 fc	0.0 fc	N/A	N/A
TOWER PERIMETER	+	0.4 fc	1.8 fc	0.0 fc	N/A	N/A
TOWER PERIMETER AREA	+	2.2 fc	14.5 fc	0.0 fc	N/A	N/A
TOWER RAMP TO STAIR	+	0.0 fc	0.0 fc	0.0 fc	N/A	N/A
TOWER STAIRS	+	0.0 fc	0.0 fc	0.0 fc	N/A	N/A

Luminaire Locations

		Location						Aim		
No.	Label	X	Y	Z	MH	Orientation	Tilt	X	Y	Z
1	BB	-25.25	258.15	20.00	20.00	270.00	0.00	-25.25	258.15	0.00
2	BB	-24.50	367.30	20.00	20.00	270.00	0.00	-24.50	367.30	0.00
3	BB	-333.75	258.15	20.00	20.00	90.00	0.00	-333.75	258.15	0.00
4	BB	-326.75	367.05	20.00	20.00	90.00	0.00	-326.75	367.05	0.00
1	KK	-328.25	123.25	20.00	20.00	90.00	0.00	-328.25	123.25	0.00
8	MM	-114.98	18.39	20.00	20.00	360.00	0.00	-114.98	18.39	0.00
9	MM	-218.48	18.39	20.00	20.00	360.00	0.00	-218.48	18.39	0.00
2	NN	-23.30	127.41	20.00	20.00	271.97	0.00	-23.30	127.41	0.00
1	RR	-183.00	171.00	20.00	20.00	90.00	0.00	-183.00	171.00	0.00
1	SS	-97.00	170.50	20.00	20.00	270.00	0.00	-97.00	170.50	0.00

Schedule

Symbol	Label	QTY	Manufacturer	Catalog Number	Description	Lamp	Number Lamps	Filename	Lumens per Lamp	LLF	Wattage
	SS	1	Lithonia Lighting	DSX1 LED P2 30K LCCO MVOLT	DSX1 LED P2 30K LCCO MVOLT	LED	1	DSX1_LED_P2_30K_LCCO_MVOLT.ies	5037	0.95	70
	RR	1	Lithonia Lighting	DSX1 LED P2 30K RCCO MVOLT	DSX1 LED P2 30K RCCO MVOLT	LED	1	DSX1_LED_P2_30K_RCCO_MVOLT.ies	5037	0.95	70
	KK	1	Lithonia Lighting	DSX1 LED P5 30K BLC MVOLT	DSX1 LED P5 30K BLC MVOLT	LED	1	DSX1_LED_P5_30K_BLC_MVOLT.ies	12047	0.95	138
	MM	2	Lithonia Lighting	DSX1 LED P8 30K TFTM MVOLT HS	DSX1 LED P8 30K TFTM MVOLT with houseside shield	LED	1	DSX1_LED_P8_30K_TFTM_MVOLT_HS.ies	17577	0.95	207
	NN	1	Lithonia Lighting	DSX1 LED P1 30K BLC MVOLT	DSX1 LED P1 30K BLC MVOLT	LED	1	DSX1_LED_P1_30K_BLC_MVOLT.ies	5299	0.95	54
	BB	4	Lithonia Lighting	DSX2 LED P8 30K T4M MVOLT	DSX2 LED P8 30K T4M MVOLT	LED	1	DSX2_LED_P8_30K_T4M_MVOLT.ies	44691	0.95	431



TYPICAL ISO-POINT FOR ALL LUMINAIRE TYPES

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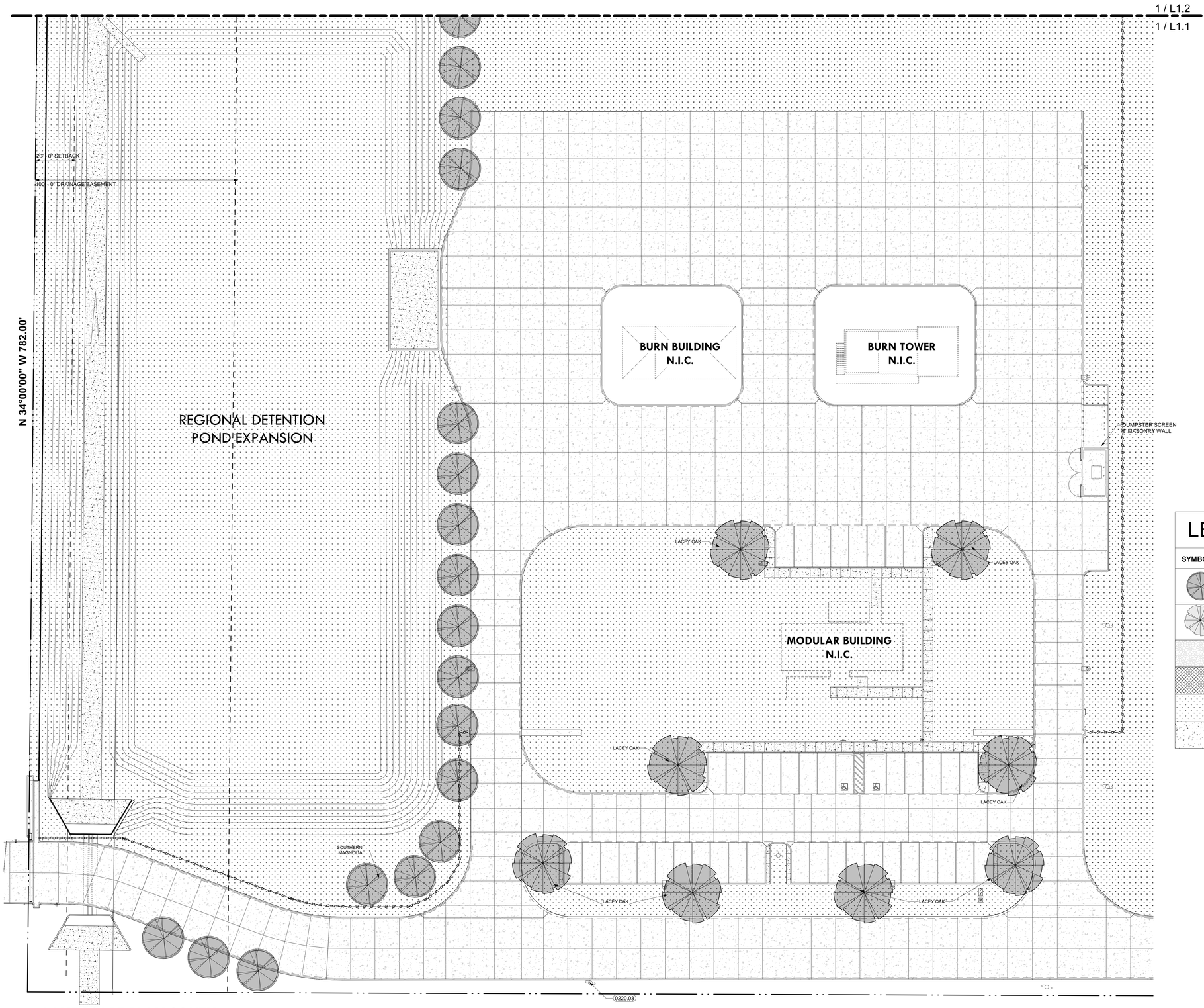
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BRW PROJECT NUMBER	219065.00

NEW BRAUNFELS FIRE TRAINING SITE INFRASTRUCTURE
353 FM 306
NEW BRAUNFELS, TX 77130

NO.	REVISION	DATE

AS1.6
OUTDOOR LIGHTING PLAN



1 LANDSCAPE PLAN SOUTH

1" = 20'-0"

0 10' 20' 40'

PLAN NORTH

TRUE NORTH

KEYNOTES

0220.03 EXISTING POWER POLE

LANDSCAPE NOTES

1. CONTRACTOR IS RESPONSIBLE FOR VERIFYING LOCATIONS OF UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION.
2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ADVISE THE ARCHITECT OF ANY CONDITION FOUND ON THE SITE WHICH PROHIBITS INSTALLATION AS SHOWN ON THESE DRAWINGS.
3. LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR FINE GRADING, REMOVAL OF MISCELLANEOUS DEBRIS, AND ANY ADDITIONAL FILL REQUIRED TO CREATE A SMOOTH CONDITION PRIOR TO PLANTING IN ALL GRASS AREAS.
4. LANDSCAPE AREAS SHALL BE KEPT FREE OF TRASH, LITTER AND WEEDS AT ALL TIMES DURING CONSTRUCTION.
5. ALL QUANTITIES ON THIS PLAN ARE FOR INFORMATION ONLY. SPACING IS AS INDICATED ON 'LANDSCAPE LEGEND' (UNLESS OTHERWISE NOTED.) IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE FULL COVERAGE IN ALL PLANTING AREAS AT SPACING AS SPECIFIED IN THE 'LANDSCAPE LEGEND' REMARKS REGARDLESS OF QUANTITY INDICATED.
6. CONTRACTOR SHALL MEET OR EXCEED ALL MINIMUM SIZES LISTED IN 'PLANT SCHEDULE' INCLUDING CONTAINER SIZE.
7. UNLESS DIMENSIONED ON PLAN, TREE LOCATIONS ARE DIAGRAMMATIC. CONTRACTOR SHALL STAKE OUT ALL INFORMAL TREE LOCATIONS IN FIELD USING COLORED FLAGS FOR REVIEW & APPROVAL BY THE ARCHITECT PRIOR TO EXCAVATION . ARCHITECT RESERVES THE RIGHT TO ADJUST PLANTS TO EXACT LOCATION IN FIELD.
8. CONTRACTOR SHALL CLEARLY DELINEATE SHRUB & GROUNDCOVER BED LAYOUTS FOR APPROVAL BY ARCHTIECT PRIOR TO EXCAVATION.
9. ALL SHRUB & GROUNDCOVER BEDS SHALL HAVE A FOUR (4") INCH MULCH LAYER.
10. PROVIDE THREE INCH (3") MULCH LAYER UNDER EXISTING TREE CANOPIES TO EXTENT OF CANOPY.
11. DESIGNATED TURF AREAS TO INCLUDE SODDED, SEEDED OR SPRIGGED GRASSES. REFER TO PLAN FOR TYPE.
12. PROVIDE STEEL EDGING AT BORDERS OF ROCK GROUNDCOVER AS INDICATED ON THE DRAWINGS.
13. ALL EXISTING PLANT MATERIAL SHALL BE MAINTAINED IN A HEALTHY GROWING CONDTION & MUST BE REPLACED WITH PLANT MATERIAL OF SIMILAR VARIETY & SIZE IF DAMAGED, DESTROYED OR REMOVED OTHER THAN AS INDICATED ON DRAWINGS.

LEGEND

SYMBOL	QTY.	BOTANICAL NAME	COMMON NAME	SIZE/ SPACING
	32	MAGNOLIA GRANDIFLORA	SOUTHERN MAGNOLIA	2.5"-3.25" CALIPER 10'-12'
	08	QUERCUS LACEYI	LACEY OAK	2.5"-3.25" CALIPER 10'-12'
	RIVER ROCK			
	BERMUDAGRASS SOD			
	BERMUDAGRASS HYDROMULCH			
	CONCRETE			

REGISTERED LANDSCAPE ARCHITECT
RAYNA HOLLIDAY
STATE OF TEXAS
2883
11/01/2022

BROWN REYNOLDS WATFORD ARCHITECTS
175 CENTURY SQUARE DRIVE
SUITE 330
COLLEGE STATION, TEXAS 77840
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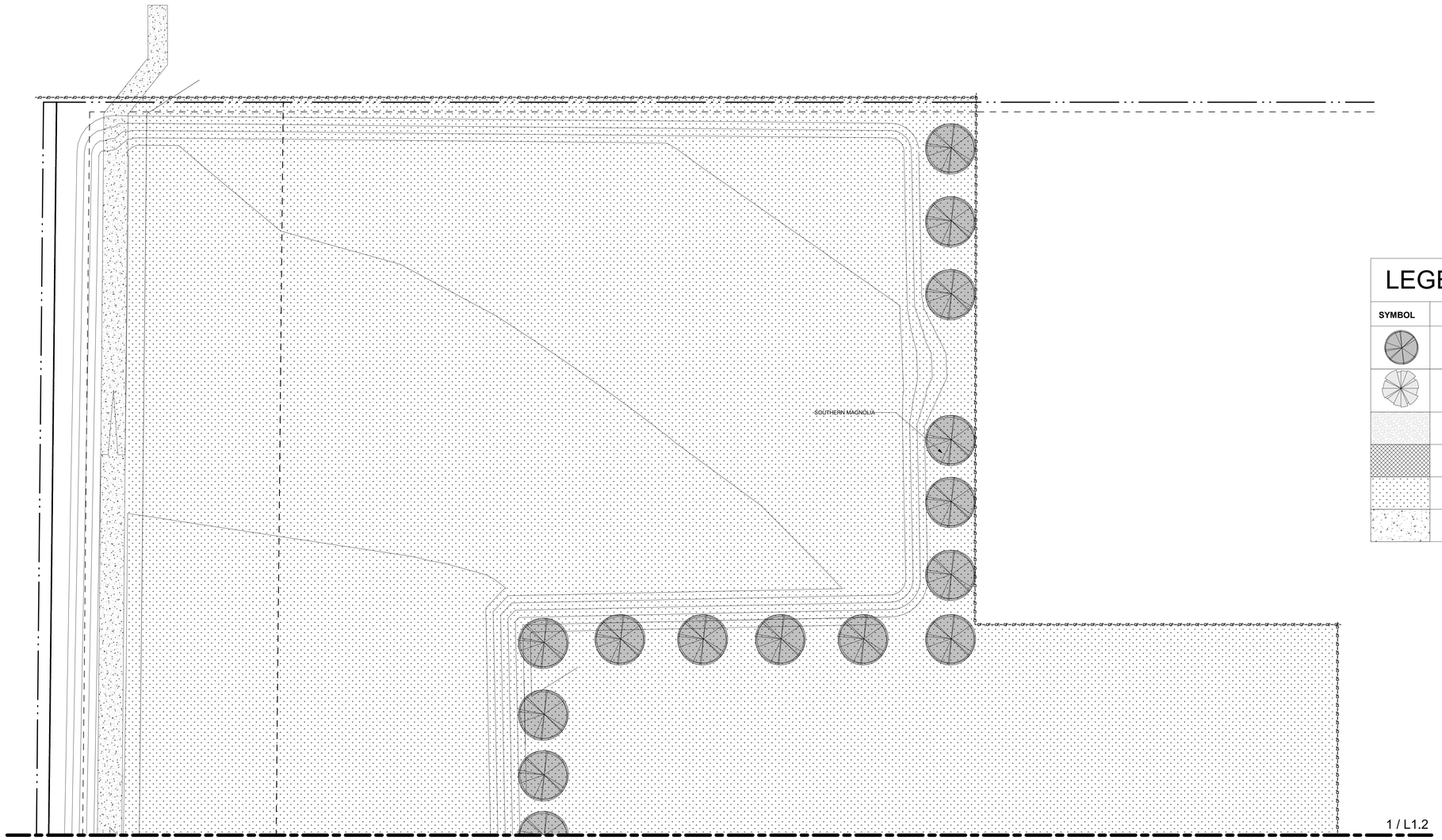
BRW PROJECT NUMBER 219065.00

NEW BRAUNFELS FIRE TRAINING SITE INFRASTRUCTURE
353 FM 306
NEW BRAUNFELS, TX 77130

NO.	REVISION	DATE

L1.1

LANDSCAPE PLANS AND DETAILS



LANDSCAPE NOTES

1. CONTRACTOR IS RESPONSIBLE FOR VERIFYING LOCATIONS OF UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION.
2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ADVISE THE ARCHITECT OF ANY CONDITION FOUND ON THE SITE WHICH PROHIBITS INSTALLATION AS SHOWN ON THESE DRAWINGS.
3. LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR FINE GRADING, REMOVAL OF MISCELLANEOUS DEBRIS, AND ANY ADDITIONAL FILL REQUIRED TO CREATE A SMOOTH CONDITION PRIOR TO PLANTING IN ALL GRASS AREAS.
4. LANDSCAPE AREAS SHALL BE KEPT FREE OF TRASH, LITTER AND WEEDS AT ALL TIMES DURING CONSTRUCTION.
5. ALL QUANTITIES ON THIS PLAN ARE FOR INFORMATION ONLY. SPACING IS AS INDICATED ON 'LANDSCAPE LEGEND' (UNLESS OTHERWISE NOTED.) IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE FULL COVERAGE IN ALL PLANTING AREAS AT SPACING AS SPECIFIED IN THE 'LANDSCAPE LEGEND' REMARKS REGARDLESS OF QUANTITY INDICATED.
6. CONTRACTOR SHALL MEET OR EXCEED ALL MINIMUM SIZES LISTED IN 'PLANT SCHEDULE' INCLUDING CONTAINER SIZE.
7. UNLESS DIMENSIONED ON PLAN, TREE LOCATIONS ARE DIAGRAMMATIC. CONTRACTOR SHALL STAKE OUT ALL INFORMAL TREE LOCATIONS IN FIELD USING COLORED FLAGS FOR REVIEW & APPROVAL BY THE ARCHITECT PRIOR TO EXCAVATION . ARCHITECT RESERVES THE RIGHT TO ADJUST PLANTS TO EXACT LOCATION IN FIELD.
8. CONTRACTOR SHALL CLEARLY DELINEATE SHRUB & GROUNDCOVER BED LAYOUTS FOR APPROVAL BY ARCHITECT PRIOR TO EXCAVATION.
9. ALL SHRUB & GROUNDCOVER BEDS SHALL HAVE A FOUR (4") INCH MULCH LAYER.
10. PROVIDE THREE INCH (3") MULCH LAYER UNDER EXISTING TREE CANOPIES TO EXTENT OF CANOPY.
11. DESIGNATED TURF AREAS TO INCLUDE SODDED, SEEDED OR SPRIGGED GRASSES. REFER TO PLAN FOR TYPE.
12. PROVIDE STEEL EDGING AT BORDERS OF ROCK GROUNDCOVER AS INDICATED ON THE DRAWINGS.
13. ALL EXISTING PLANT MATERIAL SHALL BE MAINTAINED IN A HEALTHY GROWING CONDTION & MUST BE REPLACED WITH PLANT MATERIAL OF SIMILAR VARIETY & SIZE IF DAMAGED, DESTROYED OR REMOVED OTHER THAN AS INDICATED ON DRAWINGS.

LEGEND

SYMBOL	QTY.	BOTANICAL NAME	COMMON NAME	SIZE/ SPACING
	32	MAGNOLIA GRANDIFLORA	SOUTHERN MAGNOLIA	2.5"-3.25" CALIPER 10'-12'
	08	QUERCUS LACEYI	LACEY OAK	2.5"-3.25" CALIPER 10'-12'
		RIVER ROCK		
		BERMUDAGRASS SOD		
		BERMUDAGRASS HYDROMULCH		
		CONCRETE		

PLAN NORTH / TRUE NORTH

1 LANDSCAPE PLAN NORTH
1" = 20'-0"
0 10' 20' 40'

REGISTERED ARCHITECT RAY W. HOLLIDAY STATE OF TEXAS 11/01/2022

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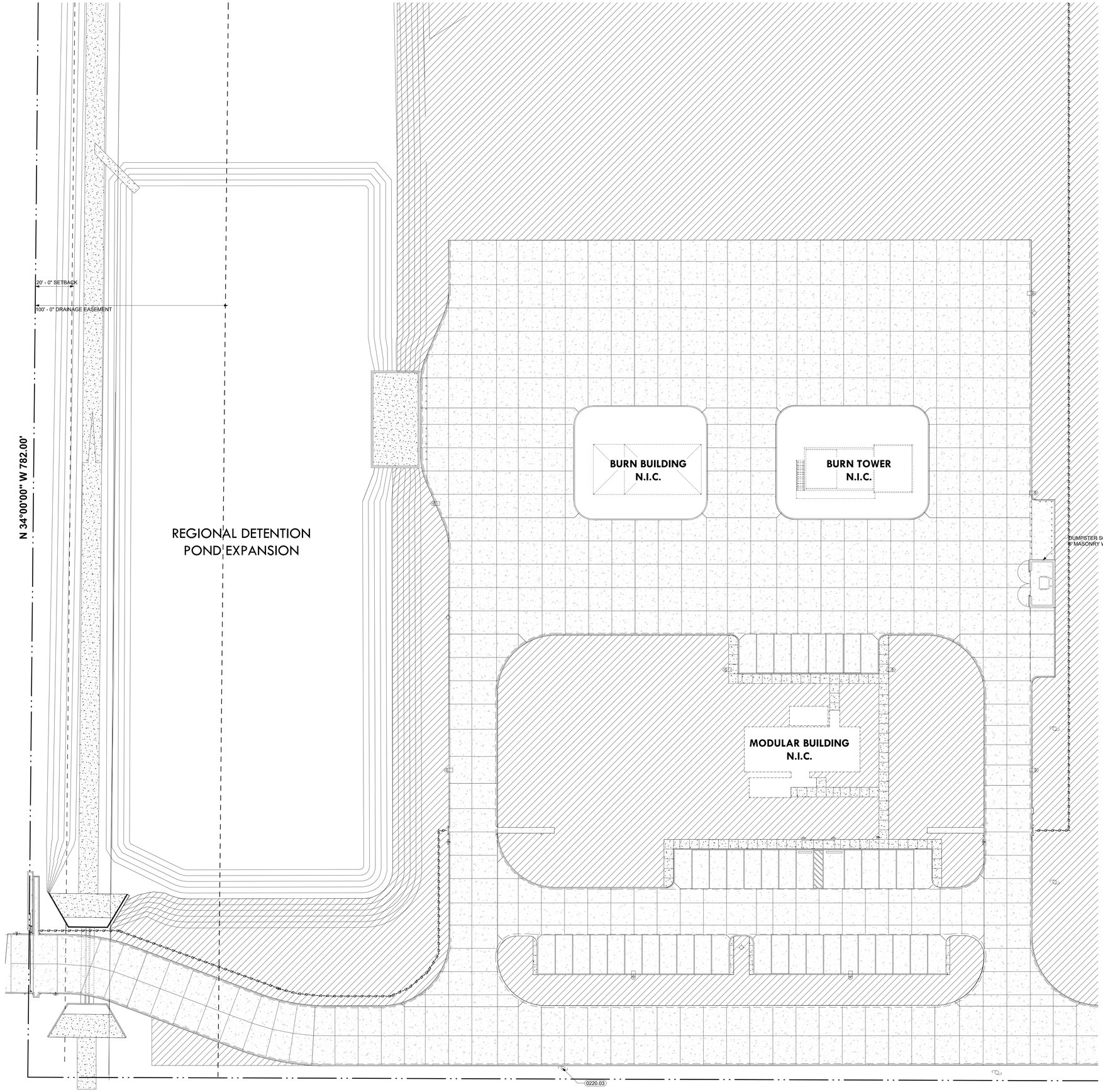
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L1.2

LANDSCAPE PLANS AND DETAILS



PLAN NORTH / TRUE NORTH

1 IRRIGATION PLAN

1" = 20'-0"

0 10' 20' 40'

KEYNOTES

0220.03 EXISTING POWER POLE

LEGEND

SYMBOL	DESCRIPTION	MANUFACTURER	MODEL NO.
	AREA TO BE IRRIGATED WITH SPRAY HEADS / ROTARY HEADS	AMERICAN IRRIGATION	

IRRIGATION NOTES

1. ALL 24 VOL LEAD AND COMMON VALVE WIRING SHALL BE A MINIMUM OF UF-14 GA. SINGLE CONDUCTOR. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR PROPER WIRE SIZE. WIRE SPLICES SHALL BE PERMANENT AND WATERPROOF.
2. COORDINATE INSTALLATION OF IRRIGATION SYSTEM WITH LANDSCAPE CONTRACTOR TO ENSURE ALL PLANT MATERIAL WILL BE WATERED IN ACCORDANCE WITH THE INTENT OF THE PLANS AND SPECIFICATIONS.
3. LATERAL PIPING SHALL HAVE A MINIMUM OF 12 INCHES OF COVER. MAINLINE AND PIPING UNDER PAVING SHALL HAVE A MINIMUM OF 18 INCHES COVER.
4. CONNECT LAWN AND HIGH-POP SPRAY HEADS TO LATERAL PIPING WITH 1/2" FLEXIBLE PVC AND 1/2" SCH. 40 PVC FITTINGS AS REQUIRED, PER DETAIL SHOWN. USE WELD-ON #795 SOLVENT AND #P070 PRIMER ON THESE CONNECTIONS.
5. CONNECT ROTARY HEADS TO LATERAL PIPE WITH LASCO UNITIZED, O-RING SWING JOINTS PER DETAIL SHOWN.
6. INSTALL QUICK COUPLING VALVES ON 10" VALVE BOX PER DETAIL SHOWN. CONNECT QUICK COUPLING VALVES TO MAINLINE PIPE WITH LASCO UNITIZED, O-RING SWING JOINTS PER DETAIL SHOWN. SUPPLY OWNER WITH THREE (3) COUPLER KEYS WITH SWIVEL HOSE ELLS EACH.
7. INSTALL REMOTE CONTROL VALVES IN 10" VALVE BOXES PER DETAIL SHOWN.
8. PERFORM ELECTRICAL WORK IN ACCORDANCE WITH LOCAL BUILDING CODE. POWER (120V) SHALL BE LOACTED IN A JUNCTION BOX WITHIN 5 FEET OF CONTROLLER LOCATION BY OTHER TRADES.
9. SLEEVES SHALL BE CLASS 200 PVC, LAG BOLTS PLACED IN SIDEWALK AT ENDS OF SLEEVES AND INSTALLED BY OTHER TRADES.
10. ROUTE COMMON WIRE FROM CONTROLLER TO REMOTE SENSORS IN SERIES PRIOR TO CONNECTIONS TO REMOTE CONTROL VALVES.
11. INSTALL DRIP IRRIGATION WITH 2 EMITTERS FOR EACH SHRUB, 4 EMITTERS FOR EACH TREE.
12. TEN DAYS PRIOR TO START OF CONSTRUCTION, VERIFY STATIC PRESSURE. IF STATIC PRESSURE IS LESS THAN 110 PSI, DO NOT START WORK UNTIL NOTIFIED TO PROCEED BY OWNER.
13. INSTALL PRESSURE REDUCING VALVE IN A 12"X17" VALVE BOX WITHIN FIVE (5') FEET OF ANY BACKFLOW PREVENTOR. DISCHARGE PRESSURE REDUCING VALVE TO BE SET AT APPROX. 80 PSI.
14. ALL WORK INCLUDED IN THE INSTALLATION OF THE IRRIGATION SYSTEM SHALL BE PERFORMED IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.
15. THE INSTALLATION OF THE IRRIGATION SYSTEM WILL BE MADE BY AN INDIVIDUAL OR FIRM DULY LICENSED AS AN IRRIGATOR BY THE STATE OF TEXAS.
16. REDUCED PRESSURE ZONE BACK FLOW PREVENTOR SHALL BE INSTALLED AND TESTED UPON INSTALLATION BY A CERTIFIED BACKFLOW TESTER.
17. MAXIMUM LENGTH OF DRIP LINE SHALL BE 275 FEET.
18. THE MAXIMUM SPACING BETWEEN EMISSION DEVICES MUST NOT EXCEED THE MANUFACTURER'S PUBLISHED RADIUS OR SPACING OF THE DEVICE(S).
19. THE IRRIGATION SYSTEMS SHALL NOT UTILIZE ABOVE-GROUND SPRAY EMISSION DEVIES IN LANDSCAPES THAT ARE LESS THAN 48 INCHES NOT INCLUDING THE IMPERVIOUS SURFACES IN EITHER LENGTH OR WIDTH AND WHICH CONTAIN IMPERVIOUS PEDESTRIAN OR VEHICULAR TRAFFIC SURFACES ALONG TWO OR MORE PERIMETERS.
20. SPRINKLER HEADS MUST DIRECT FLOW AWAY FROM ANY ADJACENT SURFACE AND SHALL NOT BE INSTALLED CLOSER THAN FOUR INCHES FROM A HARDSCAPE, SUCH AS, BUT NOT LIMITED TO, A BUILDING FOUNDATION, FENCE, CONCRETE, ASPHALT, PAVERS, OR STONES SET IN MORTAR.
21. IRRIGATION SYSTEMS SHALL NOT SPRAY WATER OVER SURFACES MADE OF CONCRETE, ASPHALT, BRICK, WOOD, STONES SET IN MORTAR, OR ANY OTHER IMPERVIOUS MATERIAL, SUCH AS, BUT NOT LIMITED TO, WALLS, FENCES, SIDEWALKS, STREETS, ETC.
22. COVERAGE OF PIPING MUST BE INSTALLED TO PROVIDE MINIMUM DEPTH COVERAGE OF SIX INCHES OF SELECT BACKFILL, BETWEEN THE TOP OF PIPE AND THE NATURAL GRADE OF THE TOP SOIL.
23. UNDERGROUND ELECTRICAL WIRING THAT CONNECTS AN AUTOMATIC CONTROLLER TO ANY ELECTRICAL COMPONENT OF THE IRRIGATION SYSTEM MUST BE BURIED WITH A MINIMUM OF SIX INCHES OF SELECT BACKFILL.

REGISTERED ARCHITECT RAYNA HOLLIDAY 18834 STATE OF TEXAS
11/01/2022

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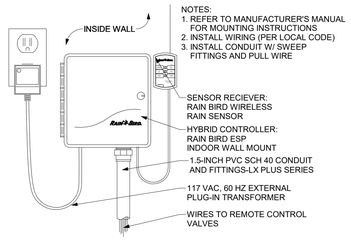
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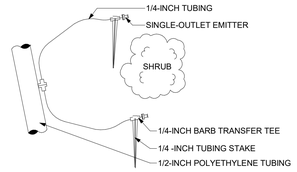
NO.	REVISION	DATE

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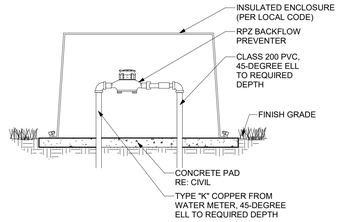
IRRIGATION PLAN AND DETAILS



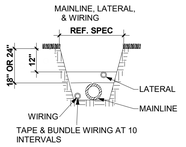
5 SPRINKLER CONTROLLER
12" = 1'-0"



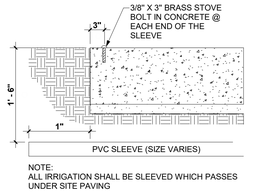
4 EMITTER DETAIL
12" = 1'-0"



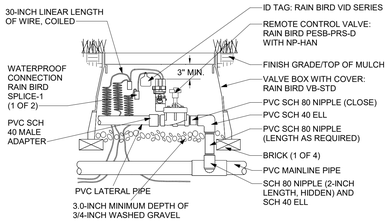
3 BACKFLOW PREVENTER
12" = 1'-0"



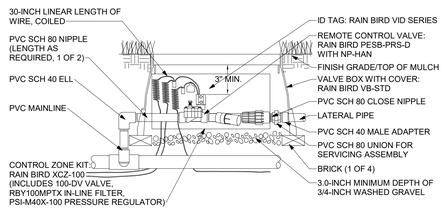
2 TRENCHING DETAIL
12" = 1'-0"



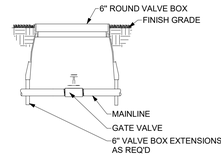
1 PVC SLEEVE DETAIL
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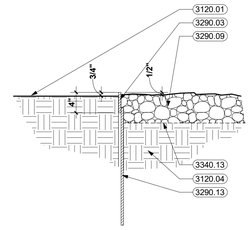
10 PEB VALVE
12" = 1'-0"



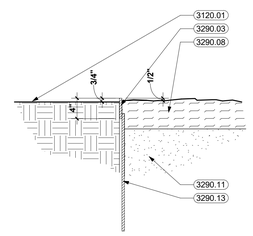
9 GATE VALVE DETAIL
12" = 1'-0"



8 GATE VALVE DETAIL
12" = 1'-0"

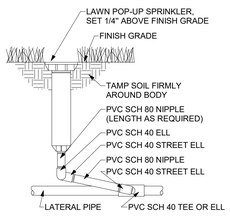


7 LANDSCAPE DETAIL
1" = 1'-0"

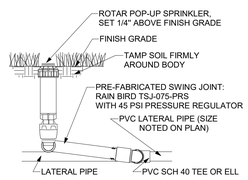


6 LANDSCAPE DETAIL
1" = 1'-0"

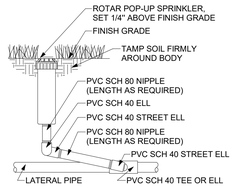
16 LANDSCAPE DETAIL
N.T.S.



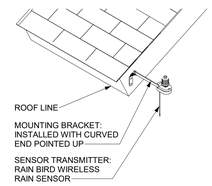
15 SPRAY 1800 SERIES HEAD
12" = 1'-0"



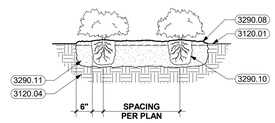
14 ROTOR 5000 SERIES HEAD
12" = 1'-0"



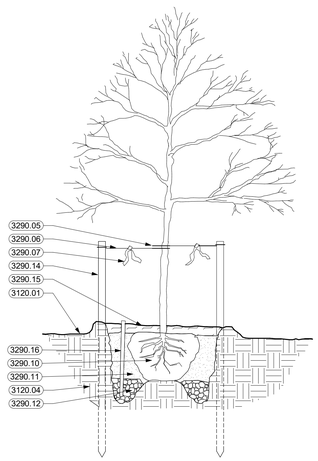
13 ROTOR 3500 SERIES HEAD
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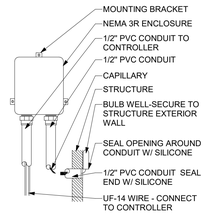
12 RAIN SENSOR
12" = 1'-0"



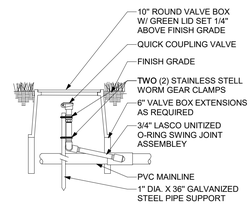
11 LANDSCAPE DETAIL
N.T.S.



17 LANDSCAPE DETAIL
1/2" = 1'-0"



19 TEMPERATURE SENSOR
12" = 1'-0"



18 COUPLING VALVE
12" = 1'-0"

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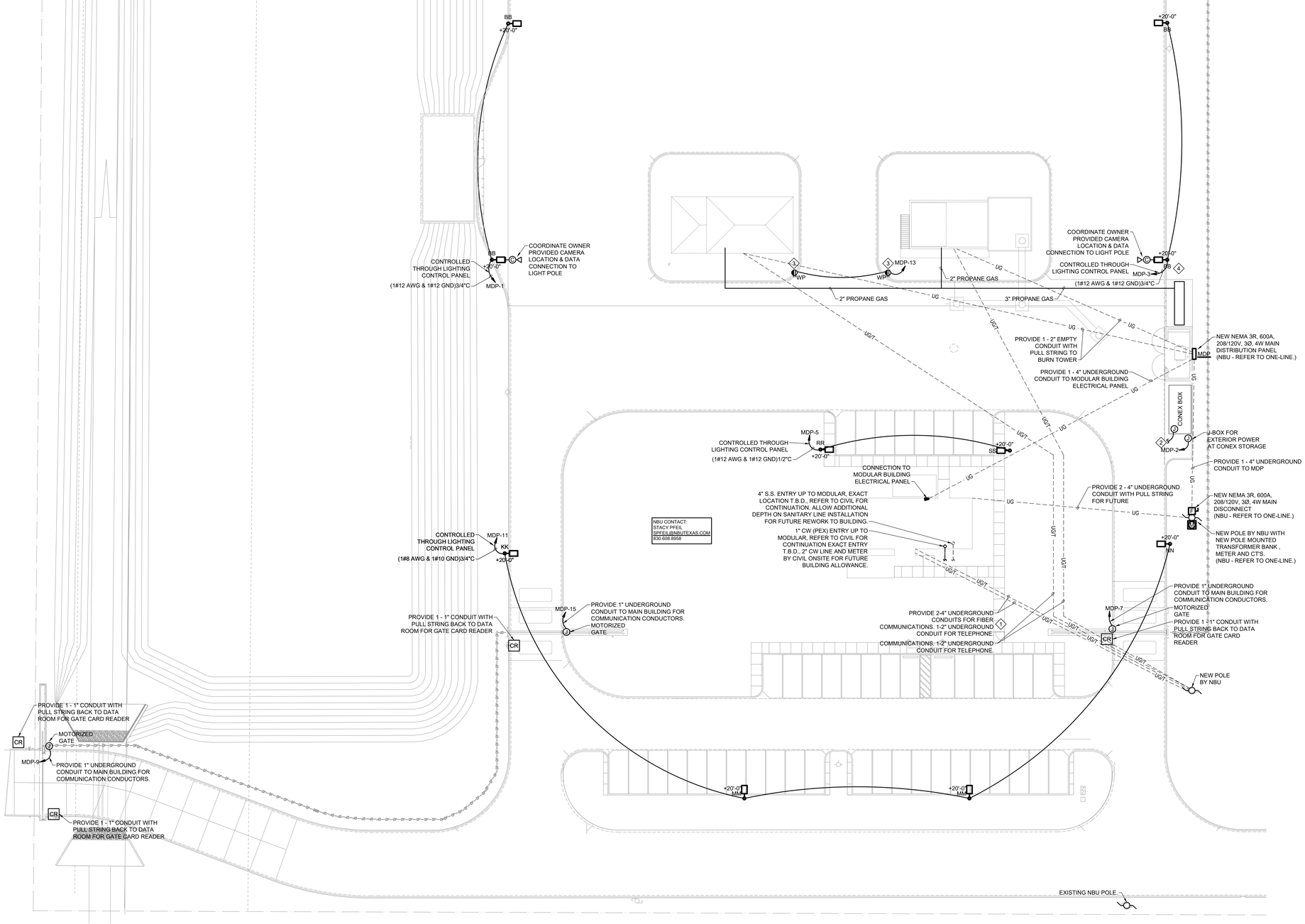
LANDSCAPE AND IRRIGATION DETAILS

DVO PROJECT – 202035

Schedule											
Symbol	Label	QTY	Manufacturer	Catalog Number	Description	Lamp	Number Lamps	Filename	Lumens per Lamp	LLF	Wattage
	SS	1	Lithonia Lighting	DSX1 LED P2 30K LCCO MVOLT	DSX1 LED P2 30K LCCO MVOLT	LED	1	DSX1_LED_P2_30K_LCCO_MVOLT.ies	5037	0.95	70
	RR	1	Lithonia Lighting	DSX1 LED P2 30K RCCO MVOLT	DSX1 LED P2 30K RCCO MVOLT	LED	1	DSX1_LED_P2_30K_RCCO_MVOLT.ies	5037	0.95	70
	KK	1	Lithonia Lighting	DSX1 LED P5 30K BLC MVOLT	DSX1 LED P5 30K BLC MVOLT	LED	1	DSX1_LED_P5_30K_BLC_MVOLT.ies	12047	0.95	138
	MM	2	Lithonia Lighting	DSX1 LED P8 30K TFTM MVOLT HS	DSX1 LED P8 30K TFTM MVOLT with houseside shield	LED	1	DSX1_LED_P8_30K_TFTM_MVOLT_HS.ies	17577	0.95	207
	NN	1	Lithonia Lighting	DSX1 LED P1 30K BLC MVOLT	DSX1 LED P1 30K BLC MVOLT	LED	1	DSX1_LED_P1_30K_BLC_MVOLT.ies	5299	0.95	54
	BB	4	Lithonia Lighting	DSX2 LED P8 30K T4M MVOLT	DSX2 LED P8 30K T4M MVOLT	LED	1	DSX2_LED_P8_30K_T4M_MVOLT.ies	44691	0.95	431

GENERAL SITE NOTES:

A. LUMINAIRES SHALL BE FURNISHED AND INSTALLED WITH LAMPS, LEDS, DRIVERS, BALLAST(S), CONTROL(S) AND MOUNTING HARDWARE. ELECTRICAL CONTRACTOR SHALL SUBMIT FIXTURE CUT SHEETS TO CLIENT AND ARCHITECT FOR THEIR FINAL APPROVAL PRIOR TO ORDERING OF THE LUMINAIRES.
B. ELECTRICAL CONTRACTOR SHALL COORDINATE LIGHTING FIXTURE QUANTITIES, MOUNTING REQUIREMENTS, FINISHES, FIXTURE AVAILABILITY AND LEAD TIME FOR DELIVERY TO SITE.
C. FLUORESCENT AND LED LUMINAIRES THAT CONTAIN BALLAST(S) AND/OR LED DRIVERS THAT CAN BE SERVICED IN PLACE SHALL HAVE A DISCONNECTING MEANS PER NEC ARTICLE 410.130(G) REQUIREMENTS. DISCONNECTING MEANS IS NOT REQUIRED FOR EMERGENCY ILLUMINATION REQUIRED IN 700.16.
D. LIGHTING FIXTURE LOCATION SHALL GOVERN OVER ALL OTHER DISCIPLINES. COORDINATE LAYOUT AND INSTALLATION OF LUMINAIRES AND MOUNTING MEANS WITH OTHER CONSTRUCTION THAT IS SUPPORTED OR THAT PENETRATES CEILINGS, INCLUDING BUT NOT LIMITED TO HVAC EQUIPMENT, FIRE-SUPPRESSION SYSTEM, AND PARTITION ASSEMBLIES PRIOR TO BEGINNING ANY WORK. NOTIFY ENGINEER OF ANY CONFLICTS BETWEEN HVAC EQUIPMENT AND LOCATION OF LUMINAIRES. VERIFY CLEARANCES REQUIRED.
E. ELECTRICAL CONTRACTOR SHALL PURCHASE ANY ADDITIONAL LUMINAIRES REQUIRED, DUE TO DAMAGE OR CLIENT REQUEST. MATCH EXISTING LUMINAIRES IN THE AREA.
F. MOUNT MULTIPLE LIGHT SWITCHES IN A MULTIPLE GANG BOX WITH SINGLE COVER PLATE.
G. MULTIWIRE BRANCH CIRCUITS SHALL BE PROVIDED WITH A SIMULTANEOUS DISCONNECTING MEANS TO DISCONNECT ALL UNGROUNDED CONDUCTORS AT THE POINT OF ORIGIN. DISCONNECTION CAN BE ACCOMPLISHED THROUGH LISTED HANDLE TIES USED WITH SINGLE-POLE CIRCUIT BREAKERS OR MULTI-POLE DEVICES. BRANCH CIRCUIT(S) SERVING EMERGENCY LIGHTING SHALL NOT BE PART OF A MULTI-WIRE BRANCH CIRCUIT.
H. GROUNDED AND UNGROUNDED CONDUCTORS OF EACH MULTI-WIRE BRANCH CIRCUIT SHALL BE GROUPED WITH WIRE TIES OR SIMILAR MEANS AT A MINIMUM OF ONE LOCATION WITHIN THE PANELBOARD OR OTHER POINT OF ORIGIN.
I. SWITCHES CONTROLLING LIGHTING LOADS: WHERE SWITCHES CONTROL LIGHTING LOADS SUPPLIED BY A GROUNDED GENERAL PURPOSE BRANCH CIRCUIT, THE GROUNDED CIRCUIT CONDUCTOR (NEUTRAL WIRE) FOR THE CONTROLLED LIGHTING CIRCUIT SHALL BE PROVIDED AT THE SWITCH LOCATION. EXISTING SWITCHES IN REMODELED SPACES SHALL NOT BE EXEMPT FROM THIS REQUIREMENT.
J. WHERE DIMMING CONTROL IS SPECIFIED AS A PORTION OF A CIRCUIT THAT ALSO HAS SWITCHED LIGHTING IN ADJACENT SPACES, PROVIDE A SEPARATE, DEDICATED NEUTRAL WIRE FROM THE DIMMING DEVICE BACK TO THE ORIGINATING PANEL.
K. ALL SWITCHES SHALL BE LABELED WITH DESIGNATED PANEL AND CIRCUIT NUMBER(S) ON THE COVER PLATE.
L. PROVIDE AN UNSWITCHED HOT AT EACH EMERGENCY LIGHT FIXTURE AND EMERGENCY LIGHTING UNIT. EMERGENCY LIGHTING SHALL BE SUPPLIED WITH A BATTERY TO SUPPLY AND MAINTAIN EMERGENCY LIGHTING LEVELS FOR A MINIMUM PERIOD OF 90 MINUTES.



KEYED NOTES:

1. PROVIDE 2 - 4" AND 1 - 2" CONDUITS UNDERGROUND FOR TELECOMMUNICATION/FIBER WIRE. COORDINATE ROUTING AND TERMINATION REQUIREMENTS WITH LOCAL UTILITIES.
2. PROVIDE 1 - 2" CONDUIT UNDERGROUND FOR CONEX JUNCTION BOX WITH PULL STRING. PROVIDE (1) 100A CIRCUIT IN PANEL 'L' FOR CONEX BOX. FINAL LOAD AND CIRCUIT REQUIREMENTS TO BE COORDINATED WITH MANUFACTURER'S SPECIFICATIONS. COORDINATE ROUTING AND TERMINATION REQUIREMENTS IN FIELD.
3. PROVIDE 1 - 15A DUPLEX RECEPTACLE IN A SINGLE GANG "IN-USE" WEATHERPROOF LOCKABLE METAL BOX ATTACHED TO POLE BASE FOR FUTURE HYDREL 7200 ADJUSTABLE FLOODLIGHT. COORDINATE RECEPTACLE HEIGHT AND ANY ADDITIONAL REQUIREMENTS WITH ARCHITECT AND MANUFACTURER'S SPECIFICATIONS PRIOR TO INSTALL.
4. CONTRACTOR TO PROVIDE AND INSTALL MINIMUM OF 2,000 GALLON PROPANE TANK. PROVIDE ALL REQUIRED APPURTENANCES, VALVES, VAPORIZATION, ETC.

PLAN NORTH / TRUE NORTH

1 MEP - TRAINING COMPLEX SITE PLAN

1" = 20'-0"

BROWN REYNOLDS WATFORD ARCHITECTS
175 CENTURY SQUARE DRIVE
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09/30/22

STATE OF TEXAS
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REGISTRATION NO. F-02334

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BRW PROJECT NUMBER 219065.00

NEW BRAUNFELS FIRE TRAINING SITE INFRASTRUCTURE
353 FM 306
NEW BRAUNFELS, TX 78130

NO.	REVISION	DATE

MEP1.0

MEP SITE PLAN

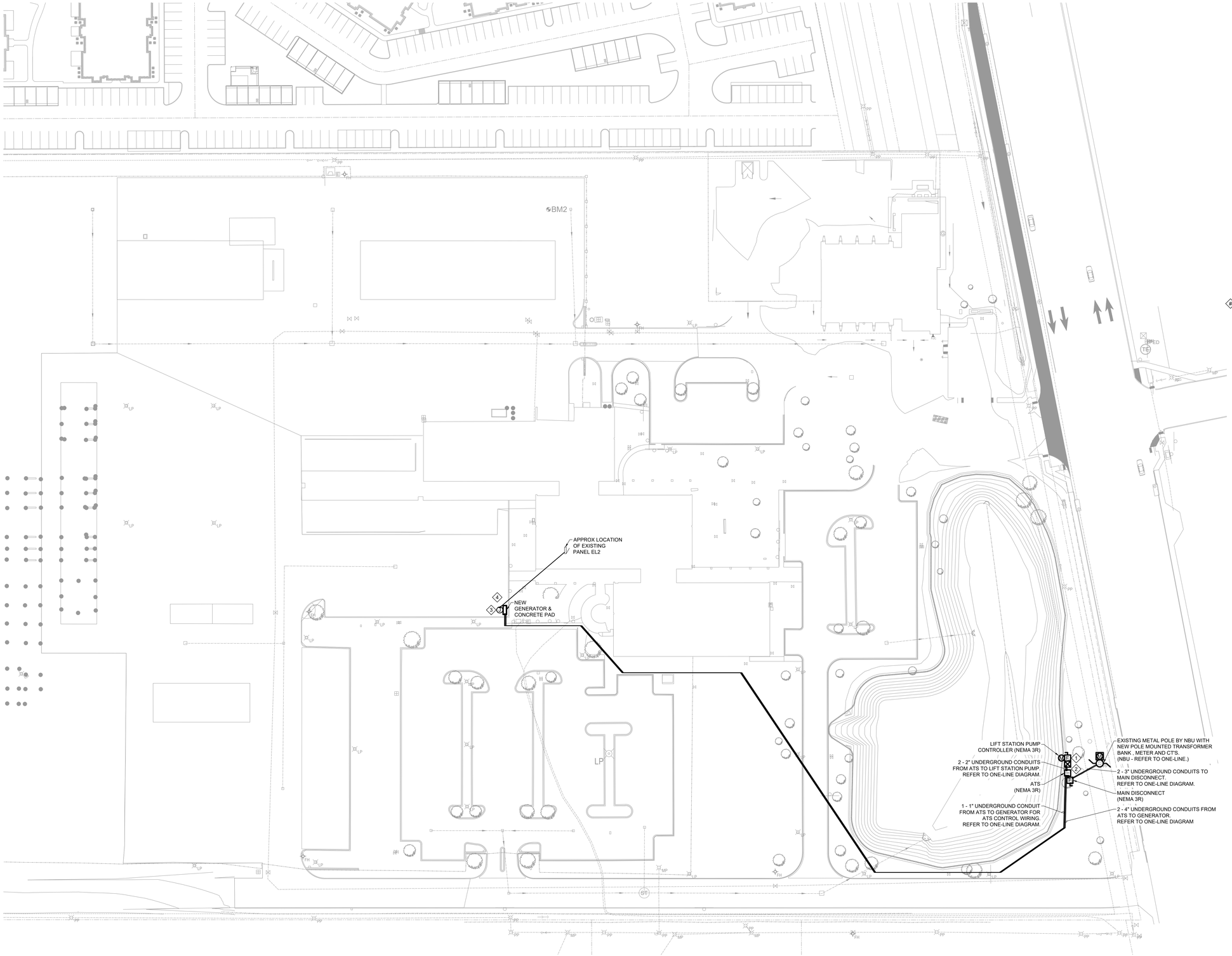
DVO PROJECT – 20203

GENERAL ELETRICAL SITE NOTES:

A. COORDINATE ALL WORK OTHER TRADES.
B. COORDINATE INSTALLATION REQUIREMENTS, EXACT LOCATIONS AND CONDUIT TRADE SIZING AND ROUTING WITH UTILITIES PRIOR TO BEGINNING ANY WORK.
C. WIRE ALL EMERGENCY EXTERIOR EGRESS FIXTURES THROUGH BUILDING LIGHTING CONTROLS.
D. LUMINAIRES SHALL BE FURNISHED AND INSTALLED WITH LAMPS, BALLAST(S), AND MOUNTING HARDWARE. ELECTRICAL CONTRACTOR SHALL SUBMIT FIXTURE CUT SHEETS TO CLIENT AND ARCHITECT FOR THEIR FINAL APPROVAL PRIOR TO ORDERING OF THE LUMINAIRES.
E. ELECTRICAL CONTRACTOR SHALL COORDINATE LIGHTING FIXTURE QUANTITIES, MOUNTING REQUIREMENTS, FINISHES, FIXTURE AVAILABILITY AND LEAD TIME FOR DELIVERY TO SITE.
F. FLUORESCENT AND LED LUMINAIRES THAT CONTAIN BALLAST(S) AND/OR LED DRIVERS THAT CAN BE SERVICED IN PLACE SHALL HAVE A DISCONNECTING MEANS PER NEC ARTICLE 410.130(G) REQUIREMENTS. DISCONNECTING MEANS IS NOT REQUIRED FOR EMERGENCY ILLUMINATION REQUIRED IN 700.16.
G. CONTRACTOR SHALL COORDINATE EXACT DEVICE AND EQUIPMENT LOCATIONS WITH CLIENT /ARCHITECT, EQUIPMENT SUBCONTRACTOR OR UTILITY CONSULTANT PRIOR TO BEGINNING ANY WORK.
H. RECEPTACLE OUTLETS AND SWITCHES SHALL BE LABELED WITH DESIGNATED PANEL AND CIRCUIT NUMBER ON THE COVER PLATE.
I. ALL 125-VOLT, SINGLE PHASE, 15- AND 20-AMPERE RECEPTACLES INSTALLED IN RESTROOMS, KITCHEN/FOOD PREP AREAS, OUTDOOR, WITHIN SIX FEET OF THE OUTSIDE EDGE OF A SINK, OR IN GARAGES, SERVICE BAYS, AND SIMILAR AREAS WHERE ELECTRICAL HAND TOOLS OR PORTABLE LIGHTING EQUIPMENT ARE TO BE USED SHALL HAVE GROUND-FAULT CIRCUIT-INTERRUPTER (GFCI) PROTECTION FOR PERSONNEL PER NATIONAL ELECTRICAL CODE (NEC) ARTICLE 210.8. GFCI DEVICE SHALL BE INSTALLED IN A READILY ACCESSIBLE LOCATION.
J. ELECTRICAL CONTRACTOR SHALL MAINTAIN DEDICATED ELECTRICAL SPACE IN FRONT AND ABOVE ALL ELECTRICAL EQUIPMENT REQUIRING SERVICING WHILE ENERGIZED. THIS INCLUDES CONTROL PANELS AND ELECTRICAL DISCONNECTS FOR HVAC EQUIPMENT ON LOCATED ON ROOFTOPS AND ABOVE OR BELOW CEILING. PENETRATIONS SUCH AS ROOF JACKS FOR ELECTRICAL POWER, LOW VOLTAGE CONTROL POWER, REFRIGERANT LINES, VENT PIPES, ETC., AND INCLUDING GAS LINES, DUCTWORK, ROOF DRAINS, SCREENING WALLS AND OTHER EQUIPMENT OF ANY TYPE, ARE NOT TO INTRUDE INTO DEDICATED ELECTRICAL SPACE. MINIMUM SPACE IN FRONT OF ELECTRIC EQUIPMENT SHALL BE THE WIDTH OF THE EQUIPMENT OR 30 INCHES, WHICHEVER IS GREATER, 36 INCHES OUT FROM ENCLOSURE FRONT AT THE HEIGHT OF 6.5 FEET.
K. ELECTRICAL UTILITY SERVICE SECONDARY CONDUCTORS SHALL BE BURIED AT A MINIMUM DEPTH OF 4'. COORDINATE ADDITIONAL INSTALLATION REQUIREMENTS AND ROUTING WITH ELECTRICAL UTILITY PRIOR TO BEGINNING ANY WORK.
L. FOR PAD MOUNTED TRANSFORMERS ELECTRICAL CONTRACTOR SHALL PROVIDE (2) 6" CONDUITS, OR ELECTRICAL UTILITY STANDARD SIZING,BURIED AT A MINIMUM DEPTH OF 4' AND ENCASED IN RED DYED CONCRETE.COORDINATE ADDITIONAL INSTALLATION REQUIREMENTS AND ROUTING WITH ELECTRICAL UTILITY PRIOR TO BEGINNING ANY WORK.
M. PVC CONDUITS INSTALLED UNDERGROUND SHALL BE BURIED IN ACCORDANCE WITH NEC ARTICLES 352.10(G), 300.5 AND TABLE 300.5 REQUIREMENTS FOR PARKING LOTS: MINIMUM DEPTH OF 24" TO THE TOP OF THE CONDUIT.
N. IF RACEWAYS ARE INSTALLED EXPOSED TO DIRECT SUNLIGHT ON OR ABOVE ROOFTOPS CORRECTIONS NEED TO BE PROVIDED FOR CONDUCTOR SIZES BASED ON AMBIENT TEMPERATURE CORRECTION FACTORS. TEMPERATURE CORRECTION FACTORS SHOWN IN NEC TABLE 310.15(B)(3)(C) SHALL BE ADDED TO THE OUTDOOR TEMPERATURE TO DETERMINE THE APPLICABLE AMBIENT TEMPERATURE FOR APPLICATION OF THE CORRECTION FACTORS IN TABLE 310.15(B)(2)(A) OR TABLE 310.15(B)(2)(B).

KEYED NOTES:

1. LIFT STATION FINAL LOAD AND CIRCUIT REQUIREMENTS TO BE COORDINATED WITH MANUFACTURER'S SPECIFICATIONS PRIOR TO PURCHASE OR INSTALL. COORDINATE ALL ROUTING AND FINAL TERMINATION REQUIREMENTS IN FIELD.
2. MAIN DISCONNECT, AUTOMATIC TRANSFER SWITCH AND LIFT STATION VFD/DISCONNECT/PUMP TO BE LOCATED ON SAME CONCRETE PAD. COORDINATE FINAL PAD LOCATION, SIZE AND ANY ADDITIONAL INSTALLATION REQUIREMENTS IN FIELD WITH OWNER.
3. JUNCTION BOX FOR CONNECTION TO GENERATOR ACCESSORIES. ROUTE 3[(4#8 & 1#8GND) IN 1"C] TO PANEL EL2, CIRCUITS: 13,15,17.
4. PROVIDE NEW NATURAL GAS UTILITY SERVICE WITH SERVICE METER AND REGULATORS TO NEW GENERATOR. GAS LOAD TO BE: 6,000 CFH DELIVERY PRESSURE OF 20" W.C. TOTAL LENGTH <20 FEET. PROVIDE WITH 2" PIPE FROM METER ASSEMBLY TO GENERATOR WITH REGULATOR AND SHUT-OFF VALVE.



PLAN NORTH / TRUE NORTH

1 MEP - TRAINING COMPLEX SITE PLAN
1" = 40'-0"

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NEW BRAUNFELS FIRE TRAINING SITE INFRASTRUCTURE
353 FM 306
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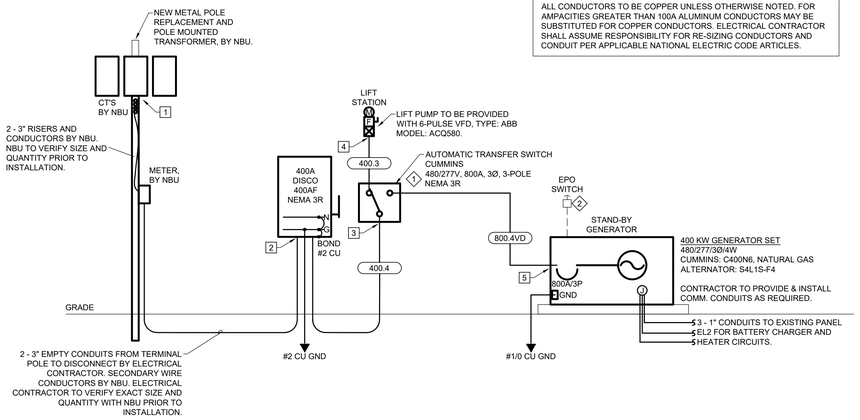
MEP2.0

MEP SITE PLAN - LIFT STATION

ELECTRICAL LOAD ANALYSIS			NEW
NEW BRAUNFELS FIRE TRAINING COMPLEX			357 FM HWY 306
DVO ENGINEERING			NEW BRAUNFELS, TX, 78130
9/29/2021			
USE	**SQFT**	**VOLTAGE**	**PHASE**
LIFT STATION PUMP	0	480 /277V	3 4W

NEW LOAD	DESIGN INFO	LOAD	NOTES AND CODE REFERENCES
LIGHTING			
INTERIOR LIGHTING	2.0 W/SF	0.0 KVA	220.12 EX #2 2018 IECC
T220.12 LOAD	0.0 KVA		
ACTUAL +25% CONT	0.0 KVA		
EXTERIOR LIGHTING		0.0 KVA	(CONNECTED LOAD)
+25% CONTINUOUS		0.0 KVA	
HVAC			220.60
ELECTRIC HEAT		0.0 KVA	220.51
COOLING			(NONCOINCIDENT LOAD) 220.60
RECEPTACLES	0.0 KVA		(CONNECTED LOAD)
< 10KVA AT 100%	0.0 KVA		220.14(I), OFFICE: 220.14(K)(1)OR(2)
REMAINDER AT 50%		0.0 KVA	220.14(I) (ACTUAL DEMAND)
OFFICE (220.14(K)(2))	0.0 KVA		(1 W/SF OFFICE/BANK ONLY)220.14(K)(2)
		0.0 KVA	(RECEPTACLE DEMAND LOAD)
MOTORS			430.24
MTRS, PUMPS AND FANS		0.0 KVA	(ACTUAL LOAD)
LARGEST MOTOR +25%		212.9 KVA	LIFT STATION PUMP
MISCELLANEOUS			
APPLIANCES		0.0 KVA	
EQUIPMENT		0.0 KVA	
KITCHEN (DF) 1.00	0.0 KVA	0.0 KVA	220.56
OTHER		0.0 KVA	
TOTAL		212.9 KVA	
REQUIRED CAPACITY		256 AMP	
SERVICE CAPACITY		400 AMP	
SPARE CAPACITY		144 AMP	

FEEDER SCHEDULE	
TAG	WIRE AND CONDUIT SIZE - 3Ø, 4W
400.3	2[(3-#3/0 & 1-3GND)2"C]
400.4	2[(4-#3/0 & 1-3GND)2"C]
600.4VD	2[(4-600 & 1-2/0GND)4"C] SIZED FOR VOLTAGE DROP
ALL CONDUCTORS TO BE COPPER UNLESS OTHERWISE NOTED. FOR AMPACITIES GREATER THAN 100A ALUMINUM CONDUCTORS MAY BE SUBSTITUTED FOR COPPER CONDUCTORS. ELECTRICAL CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR RE-SIZING CONDUCTORS AND CONDUIT PER APPLICABLE NATIONAL ELECTRIC CODE ARTICLES.	



01 ELECTRICAL ONE-LINE

SCALE: NONE

ONE-LINE DIAGRAM GENERAL NOTES:

A. A PERMANENTLY AFFIXED LABEL SHALL BE APPLIED WITH THE AVAILABLE FAULT CURRENT AT THE TIME OF THE CALCULATION. THE LABEL SHALL BE 2" X 3" IN SIZE AND SHALL BE BLUE LETTERING ON A CONTRASTING BACKGROUND. THIS LABEL SHALL ALSO INCLUDE THE DATE OF CALCULATION PER.
B. AVAILABLE UTILITY AIC NOT AVAILABLE AT TIME OF THIS SUBMITTAL, STARTING UTILITY AIC ASSUMES WORST CASE IMPEDANCE OF 1.7% ON 300KVA POLE MOUNTED XFMR OF 21,226AIC.
C. SHORT CIRCUIT RATING CALCULATED USING POINT TO POINT METHOD.
D. CONDUIT SHALL BE DIRECT BURIED 24" MINIMUM BELOW GRADE WITH WARNING TAPE. COORDINATE WITH UTILITY FOR MINIMUM DEPTH OF SERVICE FEEDERS. USE SCH 40 PVC BELOW GRADE AND RIGID GALVANIZED STEEL CONDUIT ABOVE GRADE, UNLESS NOTED OTHERWISE.
E. ALL OUTDOOR ELECTRICAL EQUIPMENT TO BE MOUNTED IN GALVANIZED, WEATHERPROOF, NEMA 3R ENCLOSURES.
F. SQUARE TAGS REFER TO FAULT CURRENT VALUES LOCATED ON THIS PAGE.
G. POLE MOUNTED TRANSFORMER IS ESTIMATED TO BE 300KVA AND MAY BE SUBJECT TO CHANGE. COORDINATE FINAL TRANSFORMER KVA AND KAIC RATING WITH UTILITY PRIOR TO PURCHASING ANY ELECTRICAL EQUIPMENT.

⑥ ONE-LINE DIAGRAM KEYED NOTES:

1. PRIOR TO PURCHASE, CONTRACTOR TO COORDINATE ATS LUG SIZE WITH MANUFACTURER. IF MANUFACTURER IS UNABLE TO PROVIDE REQUIRED LUGS, ATS TO BE UPSIZED AS REQUIRED.
2. LABEL SWITCH WITH A PERMANENT PLACARD WITH 1" TEXT INDICATING FUNCTION AND DEVICE CONTROLLED.

480Y/277V - 3 phase	**Fault Current Calculations**												
Utility Transformer Secondary Bus Fault Current Value, A: IS.C. = If.l. × 100 / %Ztransformer Maximum Available Fault Current (IAIC) I SCA = (I AIC x M) where M = 1 / (1 + f), and f = (√ (Phase) × L × I AIC) / (C × n × E) * Conductor sizes 1/0, 2/0, 3/0, and 4/0 are designated as 101, 102, 103, and 104, respectively.													
Fault Point	**Fault Location Description**	**Source (Fault Point)**	**Source I SCA**	**Voltage**	**Phase**	**Circuit Length (feet)**	**Conduit Type**	**Conductor Material Cond.**	**Conductors per phase**	**XMR Size 480/208V 3-ph Z=2.5%**	**Conductor* size (AWG,kCMIL)**	**"C" Value**	**Fault Value**	**Fault Point**
1	At Utility Transformer Secondary		21,226										21,226	1
2	At Service Disconnect	1	21,226	480	3	35	NM	CU	2	Select	103	13,923	19,362	2
3	At ATS	2	19,362	480	3	35	NM	CU	2	Select	103	13,923	17,799	3
4	At Lift Station Pump	3	17,799	480	3	10	NM	CU	2	Select	103	13,923	17,398	4
5	At Generator	3	17,799	480	3	780	M	CU	2	Select	600	22,965	8,513	5

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NEW BRAUNFELS FIRE TRAINING SITE INFRASTRUCTURE
353 FM 306
NEW BRAUNFELS, TX 78130

City of New Braunfels

NO.	REVISION	DATE

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MEP ONE-LINE - LIFT STATION

DVO PROJECT – 202030

MDP — VOLTAGE: 120/208V/3PH4W — ENCLOSURE: NEMA 3R

COPPER FEEDER & GROUND BUS — SPD — SHORT CIRCUIT: 42k A/C

SOLID COPPER, 100% NEUTRAL BUS — BUS 600 AMPS — MOUNTING: SURFACE

BOLT ON BREAKERS — MCB 600 AMPS — FEED-THRU LUGS: NO

	VOLT AMPS	SERVING	CB NOTE	BRKR	CCT	A	B	C	CCT	BRKR	CB NOTE	SERVING	VOLT AMPS	
L	862	Lighting - Exterior Pole		20	1	1362			2	20		Conex Box General Pow e	500	E
L	862	Lighting - Exterior Pole		20	3		862		4	100		Conex Box		S
L	300	Lighting - Exterior Pole		20	5			300	6	|		|		S
M	500	Motorized Gate		20	7	500			8	|		|		S
M	500	Motorized Gate		20	9		500		10	100		Modular Building Panel		S
L	767	Lighting - Exterior Pole		20	11			767	12	|		|		S
R	360	Receptacles - Exterior		20	13	360			14			Space		
M	500	Motorized Gate		20	15		500		16			Space		
		Space			17				18			Space		
		Space			19				20			Space		
		Space			21				22			Space		
		Space			23				24			Space		
		Space			25				26			Space		
		Space			27				28			Space		
		Space			29				30			Space		

PHASE CONNECTED LOAD (VA) 2222 1862 1067

PHASE DEMAND LOAD (VA) 2563 2328 1334

		CONNECTED	D.F.	DEMAND
A	APPLIANCES	0.0	1.00	0.0
E	EQUIPMENT	0.5	1.00	0.5
H	HEATING	0.0	1.00	0.0
K	KITCHEN (220.56 #KIT. APPL.) NONE	0.0	1.00	0.0
L	LIGHTING	2.8	1.25	3.5
M	MOTORS	1.0	1.00	1.0
	LARGEST MOTOR	0.5	1.25	0.6
O	OTHER	0.0	1.00	0.0
R	RECEPTACLES (FIRST 10 KW)	0.4	1.00	0.4
	RECEPTACLES (REMAINDER)	0.0	0.50	0.0
S	SUBFEED PANEL	0.0	1.00	0.0

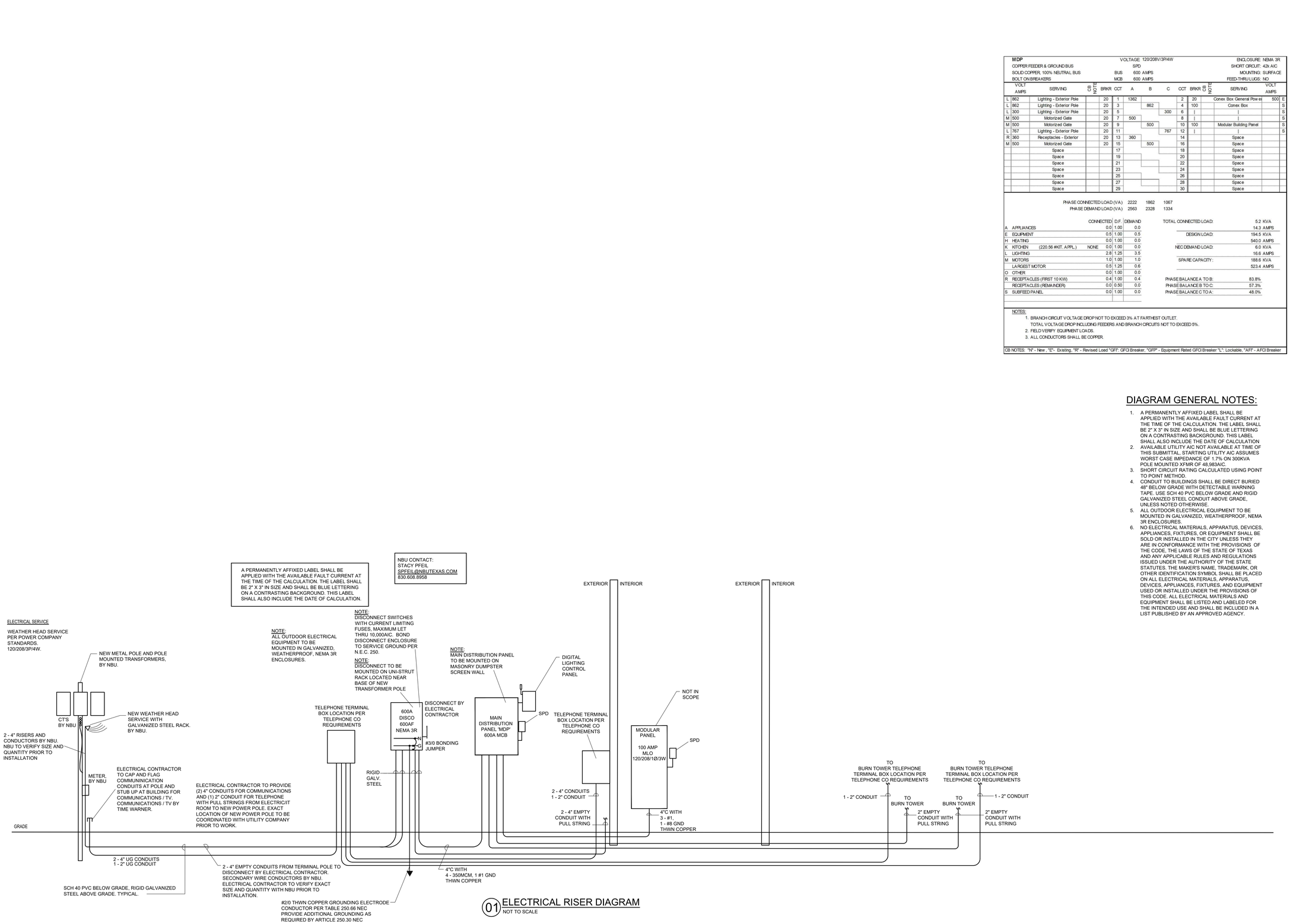
TOTAL CONNECTED LOAD:	5.2 KVA
	14.3 AMPS
DESIGN LOAD:	194.5 KVA
	540.0 AMPS
NEC DEMAND LOAD:	6.0 KVA
	16.6 AMPS
SPARE CAPACITY:	188.6 KVA
	523.4 AMPS
PHASE BALANCE A TO B:	83.8%
PHASE BALANCE B TO C:	57.3%
PHASE BALANCE C TO A:	48.0%

NOTES:
1. BRANCH CIRCUIT VOLTAGE DROP NOT TO EXCEED 3% AT FARTHEST OUTLET. TOTAL VOLTAGE DROP INCLUDING FEEDERS AND BRANCH CIRCUITS NOT TO EXCEED 5%.
2. FIELD VERIFY EQUIPMENT LOADS.
3. ALL CONDUCTORS SHALL BE COPPER.

CB NOTES: "N" - New , "E"- Existing, "R" - Revised Load "GFI": GFCI Breaker, "GFP" - Equipment Rated GFCI Breaker "L": Lockable, "AFF - AFCI Breaker

DIAGRAM GENERAL NOTES:

1. A PERMANENTLY AFFIXED LABEL SHALL BE APPLIED WITH THE AVAILABLE FAULT CURRENT AT THE TIME OF THE CALCULATION. THE LABEL SHALL BE 2" X 3" IN SIZE AND SHALL BE BLUE LETTERING ON A CONTRASTING BACKGROUND. THIS LABEL SHALL ALSO INCLUDE THE DATE OF CALCULATION
2. AVAILABLE UTILITY AIC NOT AVAILABLE AT TIME OF THIS SUBMITTAL. STARTING UTILITY AIC ASSUMES WORST CASE IMPEDANCE OF 1.7% ON 300KVA POLE MOUNTED XFMR OF 48,983AIC.
3. SHORT CIRCUIT RATING CALCULATED USING POINT TO POINT METHOD.
4. CONDUIT TO BUILDINGS SHALL BE DIRECT BURIED 48" BELOW GRADE WITH DETECTABLE WARNING TAPE. USE SCH 40 PVC BELOW GRADE AND RIGID GALVANIZED STEEL CONDUIT ABOVE GRADE, UNLESS NOTED OTHERWISE.
5. ALL OUTDOOR ELECTRICAL EQUIPMENT TO BE MOUNTED IN GALVANIZED, WEATHERPROOF, NEMA 3R ENCLOSURES.
6. NO ELECTRICAL MATERIALS, APPARATUS, DEVICES, APPLIANCES, FIXTURES, OR EQUIPMENT SHALL BE SOLD OR INSTALLED IN THE CITY UNLESS THEY ARE IN CONFORMANCE WITH THE PROVISIONS OF THE CODE, THE LAWS OF THE STATE OF TEXAS AND ANY APPLICABLE RULES AND REGULATIONS ISSUED UNDER THE AUTHORITY OF THE STATE STATUTES. THE MAKER'S NAME, TRADEMARK, OR OTHER IDENTIFICATION SYMBOL SHALL BE PLACED ON ALL ELECTRICAL MATERIALS, APPARATUS, DEVICES, APPLIANCES, FIXTURES, AND EQUIPMENT USED OR INSTALLED UNDER THE PROVISIONS OF THIS CODE. ALL ELECTRICAL MATERIALS AND EQUIPMENT SHALL BE LISTED AND LABELED FOR THE INTENDED USE AND SHALL BE INCLUDED IN A LIST PUBLISHED BY AN APPROVED AGENCY.



01 ELECTRICAL RISER DIAGRAM
NOT TO SCALE

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NEW BRAUNFELS FIRE TRAINING SITE INFRASTRUCTURE
353 FM 306
NEW BRAUNFELS, TX 78130

City of New Braunfels

NO.	REVISION	DATE

E2.1

ELECTRICAL SINGLE LINE