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SHEET NO.
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C1.4

GENERAL NOTES:

- THE EXISTING UTILITIES ARE SHOWN FOR REFERENCE ONLY. THEIR LOCATIONS ARE APPROXIMATE AND NOT TO BE TAKEN AS ACCURATE NOR ALL INCLUSIVE. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY DAMAGED EXISTING UTILITIES AT HIS EXPENSE.
- CONSTRUCTION STAKING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. CONTROL POINTS ARE FURNISHED FOR THE CONTRACTOR'S USE TO STAKE THE PROPOSED IMPROVEMENTS. HE SHALL BE RESPONSIBLE FOR VERIFYING THESE POINTS AND TRANSFERRING THEM TO AN AREA OUTSIDE OF THE CONSTRUCTION LIMITS IF NECESSARY.
- SOME SUGGESTED EROSION CONTROL MEASURES ARE SHOWN ON THESE PLANS. HOWEVER, THE CONTRACTOR IS RESPONSIBLE FOR DEVELOPING AN EROSION PREVENTION PLAN AND SUBMITTING ALL REQUIRED PERMITS AND REGULATIONS, INCLUDING NO. 1 AND NO. 11 PERMS, AND MEETING ALL REQUIREMENTS OF THE ICED REGULATIONS.
- THE CONTRACTOR SHALL STAKE AND STAKEOUT 8 INCHES OF TOP SOIL FROM THE CONSTRUCTION AREA PRIOR TO EXCAVATION. UPON COMPLETION OF THE CONSTRUCTION, THE TOP SOIL SHALL BE SPREAD IN A WORKMANLIKE MANNER.
- EXCESS EXCAVATED MATERIAL SHALL BE SPREAD ON SITE AT THE DIRECTION OF THE OWNER/ENGINEER. LARGE ROCKS (1' & LARGER) SHALL BE HAULED OFF SITE AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL RETURN ALL EXCAVATED AREAS, FENCES, UTILITIES PAVED AREAS, ETC., TO THEIR PRE-CONSTRUCTION CONDITION OR BETTER. THIS WORK SHALL BE CONSIDERED INCIDENTAL AND NOT A SEPARATE BID ITEM, UNLESS OTHERWISE SHOWN ON THE BID SCHEDULE.
- THE CONTRACTOR SHALL MAINTAIN ADEQUATE DRAINAGE AT ALL TIMES AND SHALL BE RESPONSIBLE FOR ALL STORM WATER CONTROL, PUMPING, AND DETERMINING NECESSARY FOR THE CONSTRUCTION OF THIS PROJECT. THIS WORK SHALL BE CONSIDERED INCIDENTAL AND NOT A SEPARATE PAY ITEM.
- ALL DIMENSIONS ARE TO EDGE OF PAVEMENT AND CENTER OF PIPE UNLESS OTHERWISE NOTED.
- BUILDER TO INSTALL WELL FOR WATER SERVICE.
- WATER LINES SHALL BE INSTALLED A MINIMUM 42" BELOW THE PROPOSED GRADE.
- WATER SHALL NOT BE TAKEN FROM THE WATER MAINS WITHOUT PRIOR KNOWLEDGE AND APPROVAL FROM JCSD.
- BUILDER TO INSTALL ON-SITE SEWER SYSTEM FOR SEWER SERVICE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR SEEDING AND ESTABLISHING GRASS IN THE AREAS OF DISTURBED SOIL. HYDROSEEDING OR SOILING MAY BE SUBSTITUTED FOR SEEDING AT HIS OPTION. THE CONTRACTOR SHALL INSTALL A 4" OF EROSION CONTROL BLANKET ADJACENT TO THE EDGE OF PAVEMENT AND 12' ALONG THE CENTERLINE OF THE PROPOSED DRAINAGE CHANNELS.
- THE DEVELOPER AND CONTRACTOR ARE RESPONSIBLE FOR COMMUNICATING WITH PROPERTY OWNERS ON ANY OFFSITE WORK.
- FOR UTILITY LINE LOCATIONS, CALL DICESS (TEXAS811)

UTILITY CONTACTS:

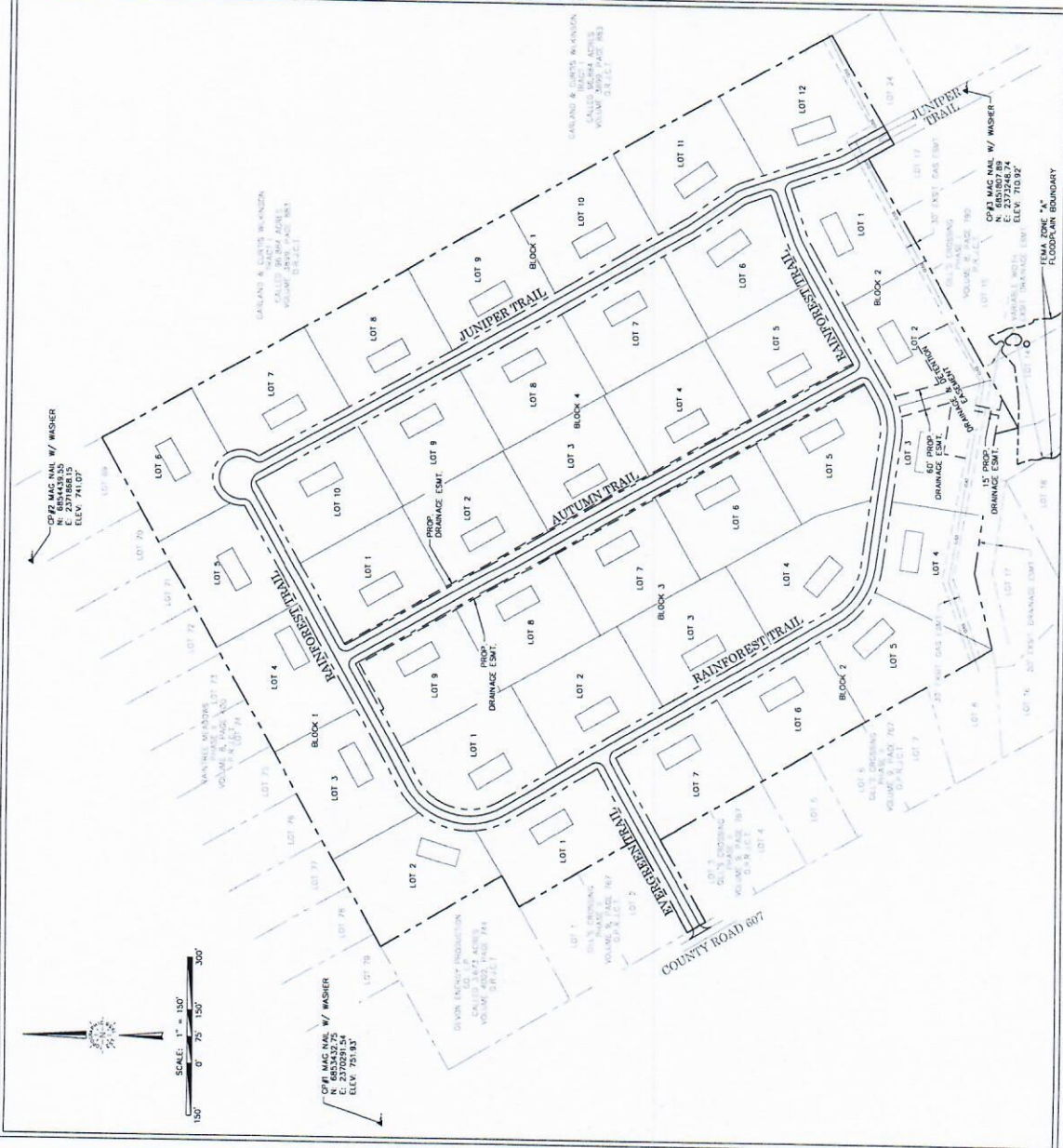
THE CONTRACTOR SHALL VERIFY THE LOCATION AND DIMENSIONS OF EXISTING UTILITIES SHOWN ON THESE PLANS AND SHALL BE RESPONSIBLE TO VERIFY LOCATION, DEPTH, AND DIMENSION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.

ATMOS ENERGY (EMERGENCY) 1-877-355-4000
ATMOS ENERGY (REGULAR) 1-877-355-6301
ATMOS ENERGY (CUSTOMER SERVICE) 1-877-355-6301
ATMOS ENERGY (REGULAR) 1-877-355-6301
ATMOS ENERGY (CUSTOMER SERVICE) 1-877-355-6301
ATMOS ENERGY (REGULAR) 1-877-355-6301
ATMOS ENERGY (CUSTOMER SERVICE) 1-877-355-6301

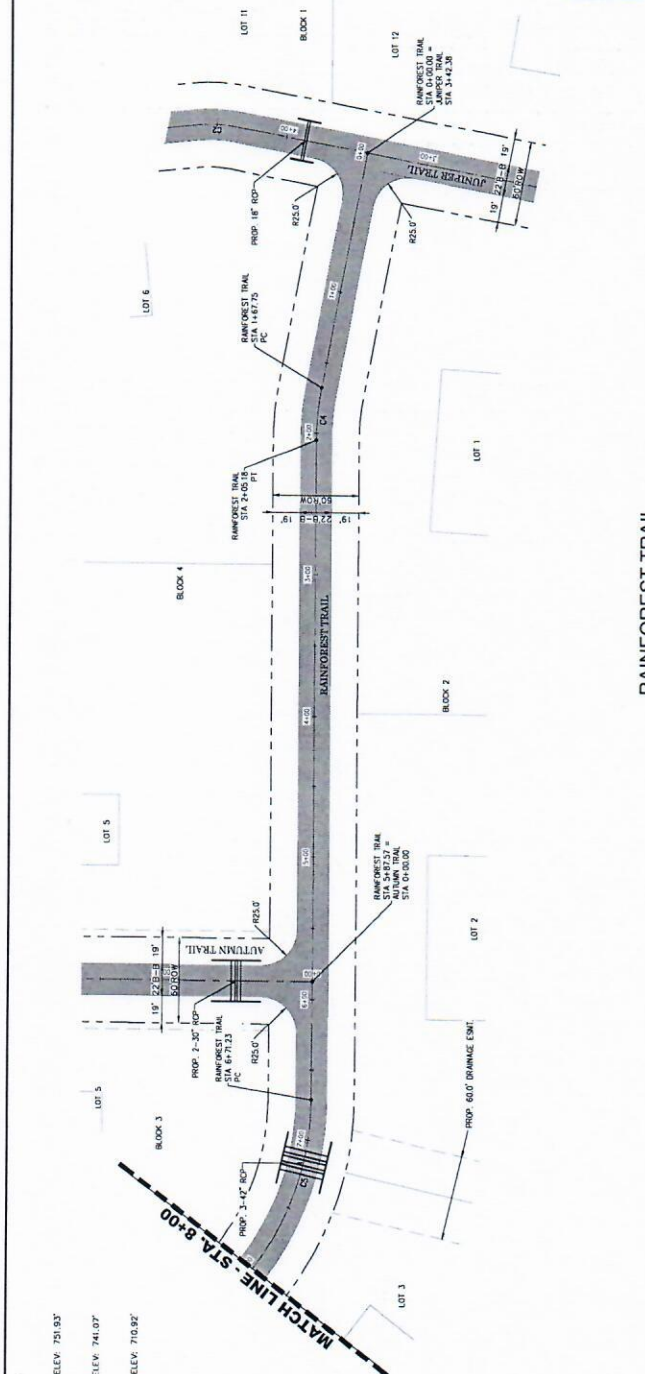
BENCHMARKS:

| | | |
|------|---------------|---------------|
| CP#1 | N: 6853432.75 | ELEV: 751.937 |
| CP#1 | E: 2370291.34 | ELEV: 751.937 |
| CP#2 | N: 6854439.55 | ELEV: 741.07 |
| CP#2 | E: 2371868.15 | ELEV: 741.07 |
| CP#3 | N: 6851807.89 | ELEV: 710.87 |
| CP#3 | E: 2373242.14 | ELEV: 710.87 |

SITE MAP



BENCHMARKS:
 CP# 655433.74
 ELEV: 735.93'
 CP#2
 E: 2379291.54
 ELEV: 741.07'
 R: 6554330.55
 C: 2371866.15
 P: 6553807.89
 E: 2379246.74
 ELEV: 710.92'



TOPOGRAPHIC
 LOYALTY INNOVATION LEGACY
 491 WINDCOTT RD. STE. 200 • BENBROOK, TEXAS 76126
 TELEPHONE: (817) 744-7512 • FAX: (817) 744-7514
 TEXAS PLM REGISTRATION NO. 19429
 WWW.TOPOGRAPHIC.COM

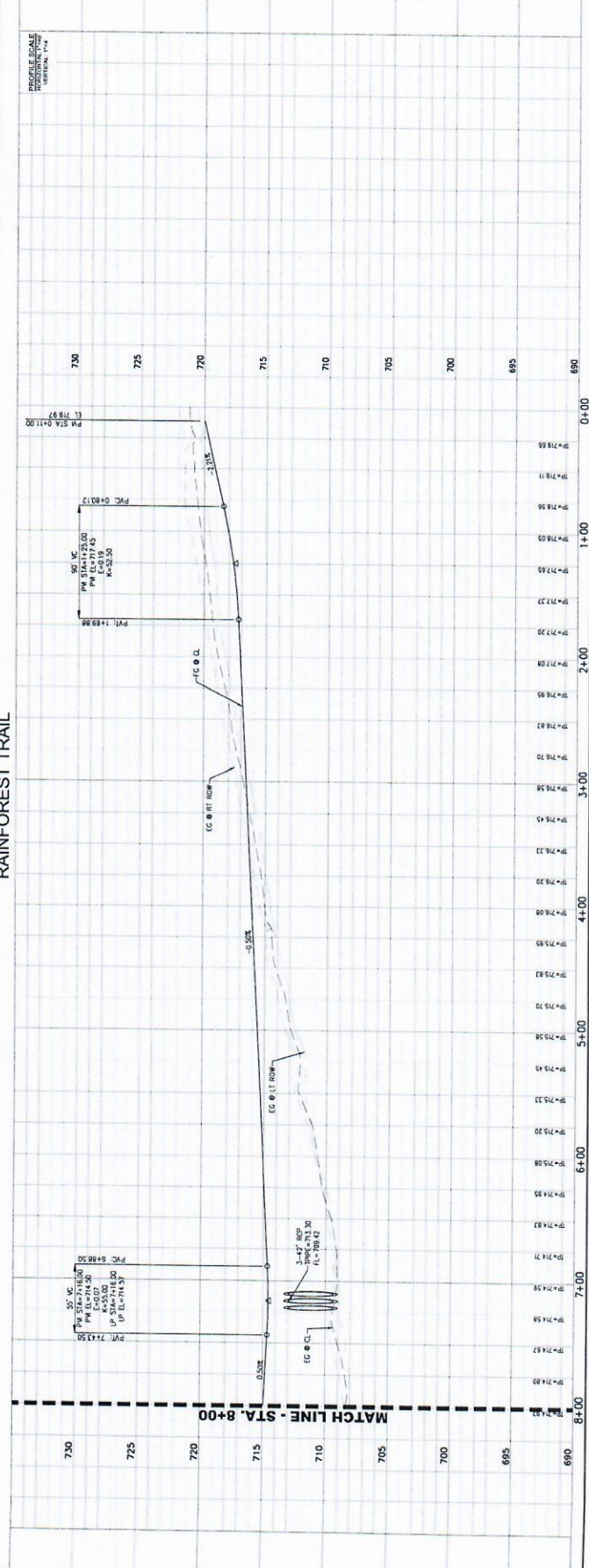
**GILL'S CROSSING PHASE III
 JOHNSON COUNTY, TEXAS
 RAINFOREST TRAIL - PLAN & PROFILE
 (STA. 0+00-8+00)**

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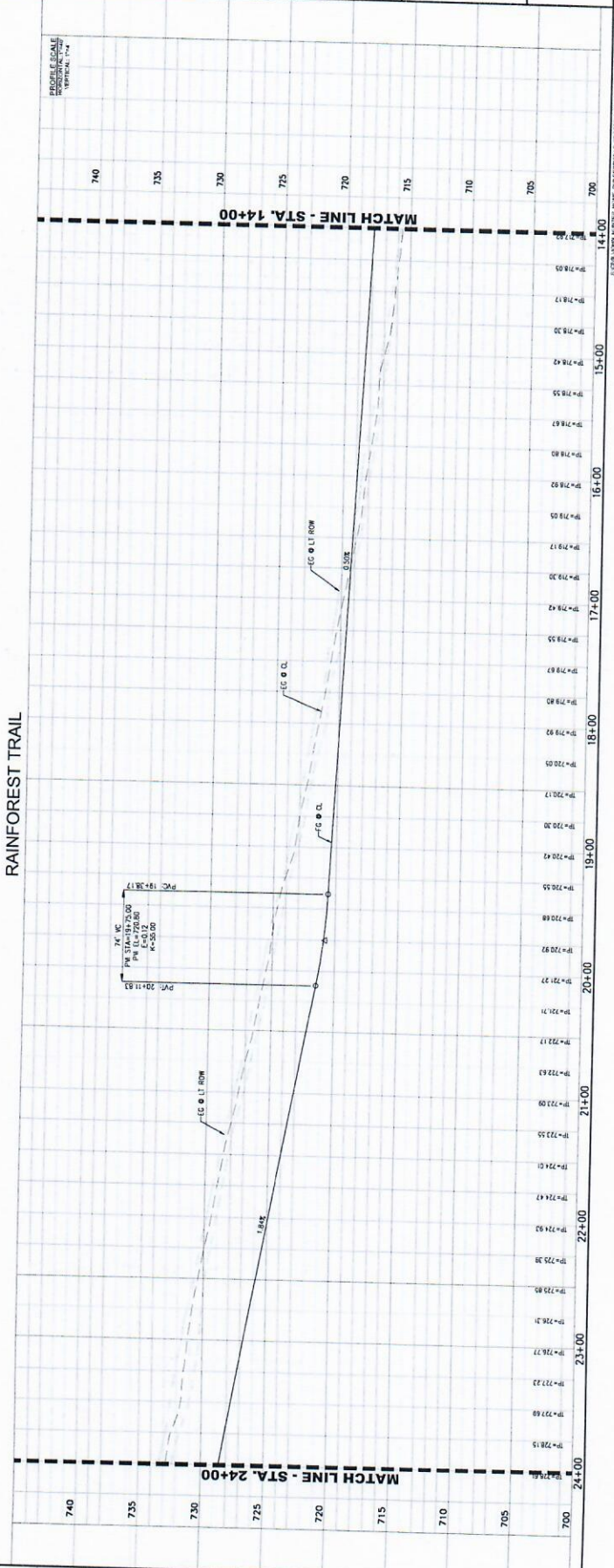
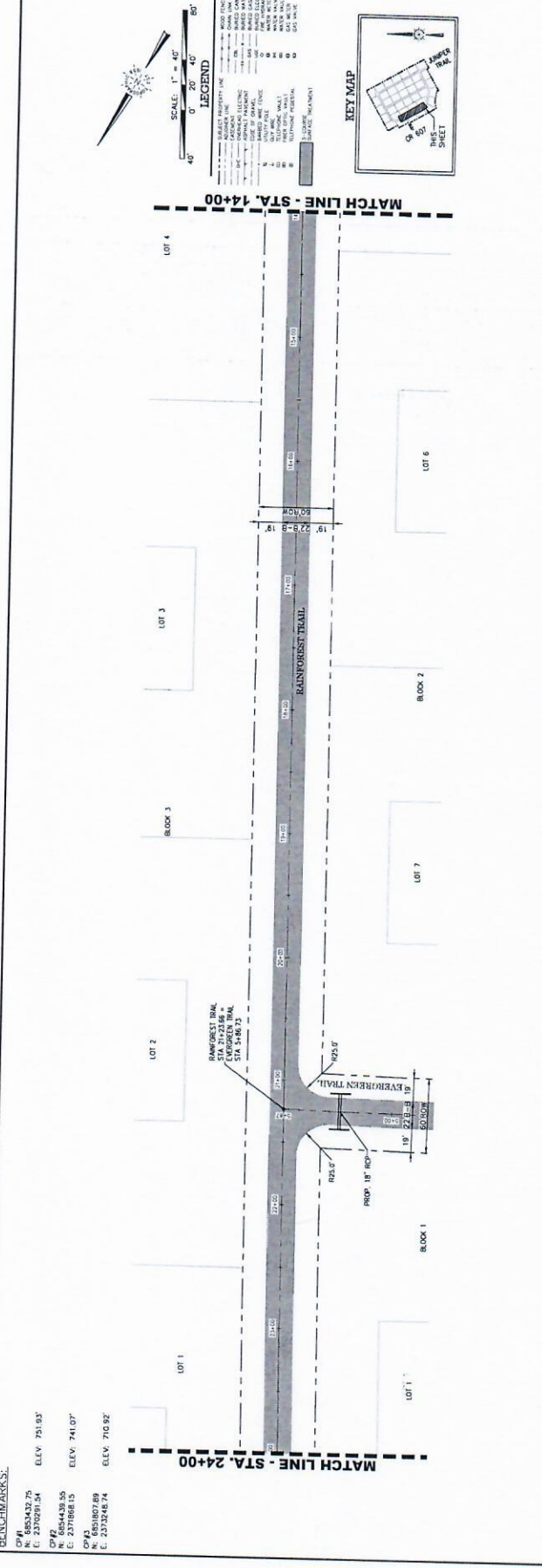
ALIGNMENT CURVE DATA TABLE

| CURVE NO. | LENGTH | ADIUS | DELTA | CHORD BEARING | CHORD LENGTH |
|-----------|---------|---------|----------|---------------|--------------|
| C4 | 374.47' | 200.00' | 10.4270° | S65.2774°W | 37.37' |
| C5 | 131.07' | 200.00' | 37.5796° | S78.5200°W | 128.68' |

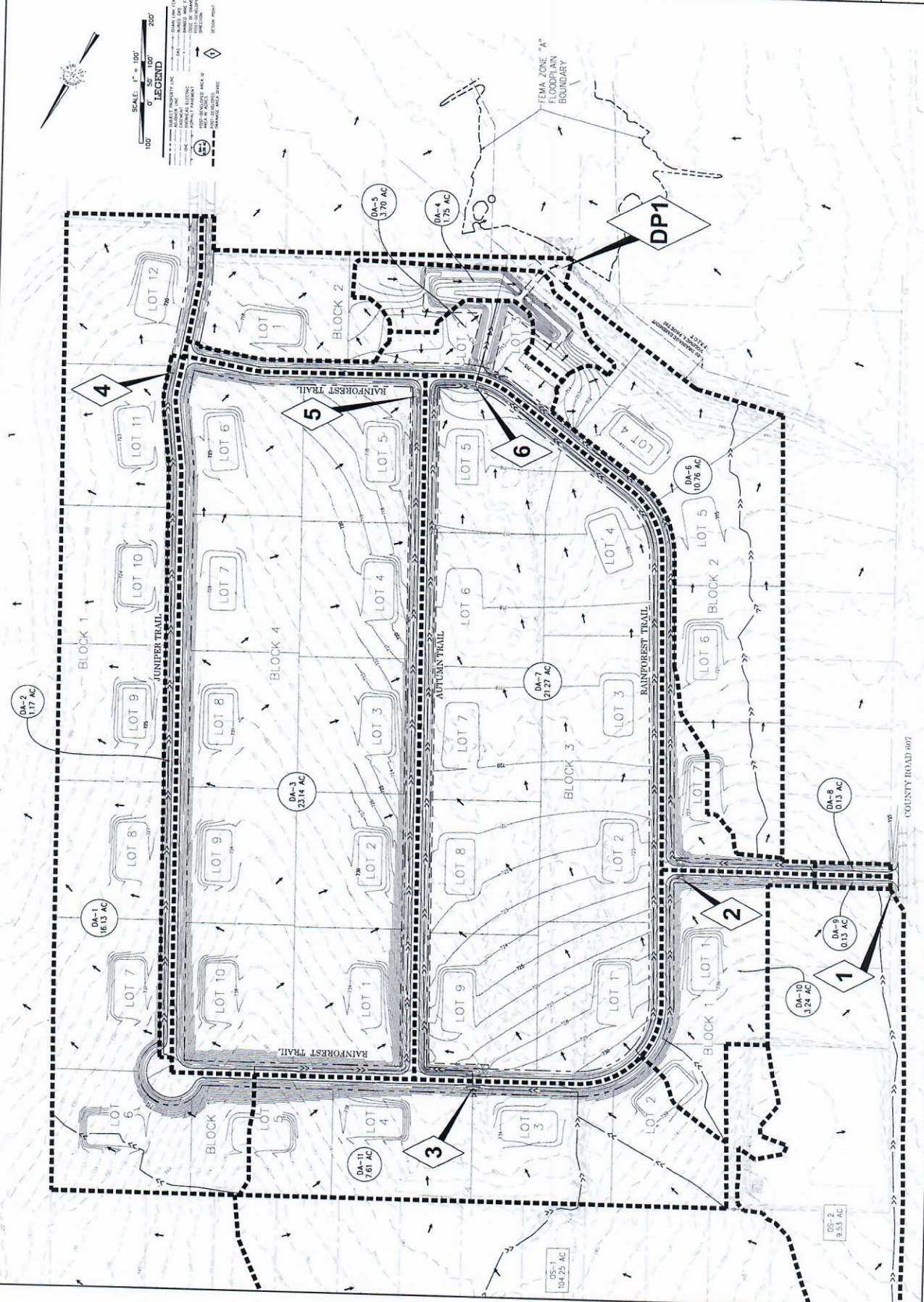




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01/19/24

SHEET NO.

C4.3

NO. DATE REVISION DESCRIPTION

SWM Hydrology Table 1.3

PRE-DEVELOPED TIME OF CONCENTRATION

| Land Use | Area (acres) | Minimum Road/C' (ft) | Maximum Road/C' (ft) | Sheet Flow | | Drainage Concentration Flow | | | | Channelized Flow #1 | | | | Total Time of Concentration | | | | | | |
|-------------|--------------|----------------------|----------------------|------------|---------------------|-----------------------------|--------------------|----------------------|---------------------|---------------------|------|--------|----------|-----------------------------|---------|----------|--------|----------|----------------------|------------|
| | | | | n | F _s (ft) | S | L (1000' max) (ft) | T _s (min) | Surface Description | Comment | S | L (ft) | V (ft/s) | T _c (min) | n | R (ft/s) | L (ft) | V (ft/s) | T _c (min) | Calculated |
| Residential | 15 | 30 | 3.36 | 0.0097 | 100 | 12.77 | Unpaved | 16.13 | 0.01212 | 200.35 | 1.78 | 31.87 | 0.035 | 0.30 | 0.03726 | 668.4 | 2.64 | 6.96 | 44.58 | 44.58 |
| Residential | 15 | 30 | 3.36 | 0.0097 | 100 | 12.77 | Unpaved | 16.13 | 0.01212 | 200.35 | 1.78 | 31.87 | 0.035 | 0.30 | 0.03726 | 668.4 | 2.64 | 6.96 | 44.58 | 44.58 |
| Residential | 15 | 30 | 3.36 | 0.0097 | 100 | 12.77 | Unpaved | 16.13 | 0.01212 | 200.35 | 1.78 | 31.87 | 0.035 | 0.30 | 0.03726 | 668.4 | 2.64 | 6.96 | 44.58 | 44.58 |
| Residential | 15 | 30 | 3.36 | 0.0097 | 100 | 12.77 | Unpaved | 16.13 | 0.01212 | 200.35 | 1.78 | 31.87 | 0.035 | 0.30 | 0.03726 | 668.4 | 2.64 | 6.96 | 44.58 | 44.58 |
| Residential | 15 | 30 | 3.36 | 0.0097 | 100 | 12.77 | Unpaved | 16.13 | 0.01212 | 200.35 | 1.78 | 31.87 | 0.035 | 0.30 | 0.03726 | 668.4 | 2.64 | 6.96 | 44.58 | 44.58 |

PRE-DEVELOPED DRAINAGE AREA CALCULATIONS - NATIONAL METHOD

| Area No | Area (acres) | Time of Conc. Road/C' (min) | 5-year Intensity (in/hr) | 10-year Intensity (in/hr) | 25-year Intensity (in/hr) | 100-year Intensity (in/hr) | Comments |
|---------|--------------|-----------------------------|--------------------------|---------------------------|---------------------------|----------------------------|----------|
| OS-1 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-2 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-3 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-4 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-5 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-6 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-7 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-8 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-9 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-10 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-11 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-12 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-13 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-14 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-15 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-16 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-17 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-18 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-19 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-20 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-21 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-22 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-23 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-24 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-25 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-26 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-27 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-28 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-29 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-30 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-31 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-32 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-33 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-34 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-35 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-36 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-37 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-38 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-39 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-40 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-41 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-42 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-43 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-44 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-45 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-46 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-47 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-48 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-49 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-50 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-51 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-52 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-53 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-54 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-55 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-56 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-57 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-58 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-59 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-60 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-61 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-62 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-63 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-64 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-65 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-66 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-67 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-68 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-69 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-70 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-71 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-72 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-73 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-74 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-75 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-76 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-77 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-78 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-79 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-80 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-81 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-82 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-83 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-84 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-85 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-86 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-87 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-88 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-89 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-90 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-91 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-92 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-93 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-94 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-95 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-96 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-97 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-98 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-99 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |
| OS-100 | 3.25 | 30 | 0.47 | 0.52 | 0.58 | 0.63 | UNPAVED |

ESWM Hydrology Table 1.5

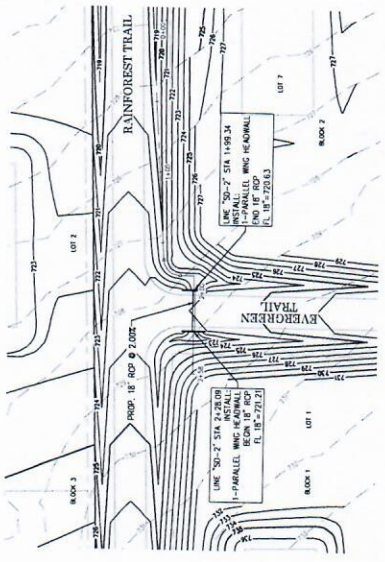
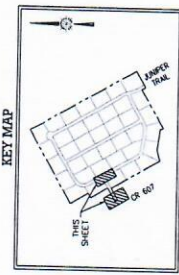
POST-DEVELOPED

| Land Use | Area (acres) | Minimum Road/C' (ft) | Time of Conc. Road/C' (min) | Sheet Flow | | Drainage Concentration Flow | | | | Channelized Flow #1 | | | | Total Time of Concentration | | | | | | |
|-------------|--------------|----------------------|-----------------------------|------------|---------------------|-----------------------------|--------------------|----------------------|---------------------|---------------------|------|--------|----------|-----------------------------|---------|----------|--------|----------|----------------------|------------|
| | | | | n | F _s (ft) | S | L (1000' max) (ft) | T _s (min) | Surface Description | Comment | S | L (ft) | V (ft/s) | T _c (min) | n | R (ft/s) | L (ft) | V (ft/s) | T _c (min) | Calculated |
| Residential | 15 | 30 | 3.36 | 0.0097 | 100 | 12.77 | Unpaved | 16.13 | 0.01212 | 200.35 | 1.78 | 31.87 | 0.035 | 0.30 | 0.03726 | 668.4 | 2.64 | 6.96 | 44.58 | 44.58 |
| Residential | 15 | 30 | 3.36 | 0.0097 | 100 | 12.77 | Unpaved | 16.13 | 0.01212 | 200.35 | 1.78 | 31.87 | 0.035 | 0.30 | 0.03726 | 668.4 | 2.64 | 6.96 | 44.58 | 44.58 |
| Residential | 15 | 30 | 3.36 | 0.0097 | 100 | 12.77 | Unpaved | 16.13 | 0.01212 | 200.35 | 1.78 | 31.87 | 0.035 | 0.30 | 0.03726 | 668.4 | 2.64 | 6.96 | 44.58 | 44.58 |
| Residential | 15 | 30 | 3.36 | 0.0097 | 100 | 12.77 | Unpaved | 16.13 | 0.01212 | 200.35 | 1.78 | 31.87 | 0.035 | 0.30 | 0.03726 | 668.4 | 2.64 | 6.96 | 44.58 | 44.58 |
| Residential | 15 | 30 | 3.36 | 0.0097 | 100 | 12.77 | Unpaved | 16.13 | 0.01212 | 200.35 | 1.78 | 31.87 | 0.035 | 0.30 | 0.03726 | 668.4 | 2.64 | 6.96 | 44.58 | 44.58 |
| Residential | 15 | 30 | 3.36 | 0.0097 | 100 | 12.77 | Unpaved | 16.13 | 0.01212 | 200.35 | 1.78 | 31.87 | 0.035 | 0.30 | 0.03726 | 668.4 | 2.64 | 6.96 | 44.58 | 44.58 |
| Residential | 15 | 30 | 3.36 | 0.0097 | 100 | 12.77 | Unpaved | 16 | | | | | | | | | | | | |

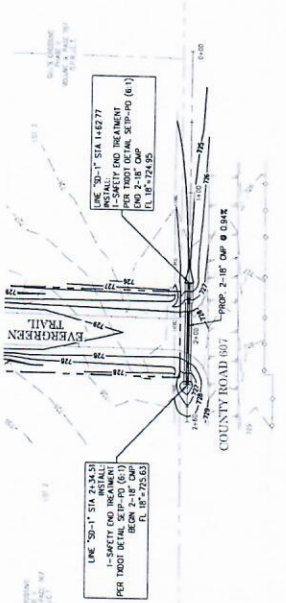


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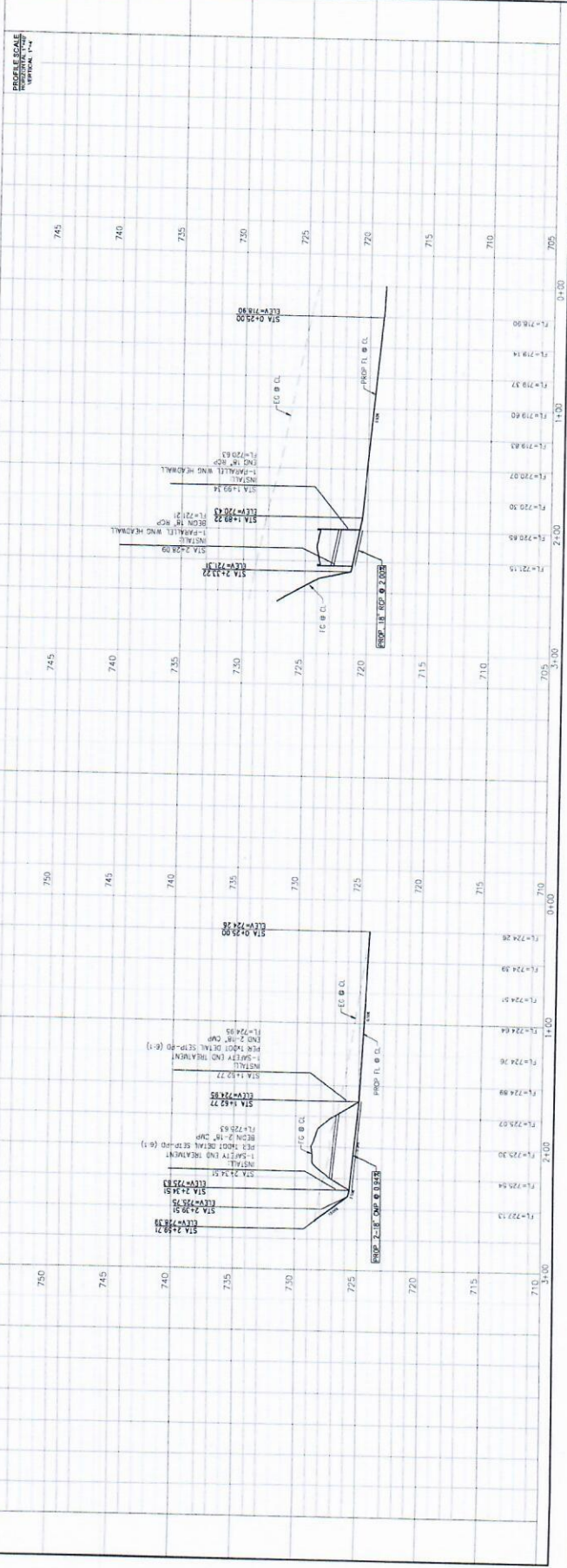
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SD-2



SD-1

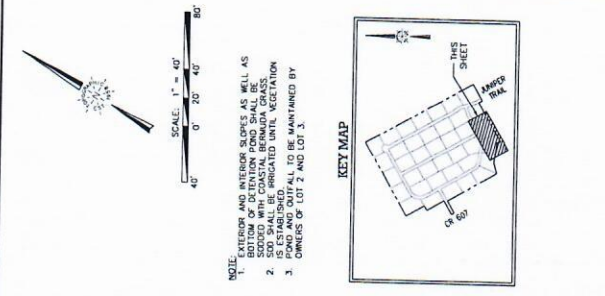


SURVAYOR: MARIO DOMAL, M.A.S.P., C.E., P.E., LICENSE NO. 11100, REGISTERED PROFESSIONAL ENGINEER, LICENSE NO. 11100

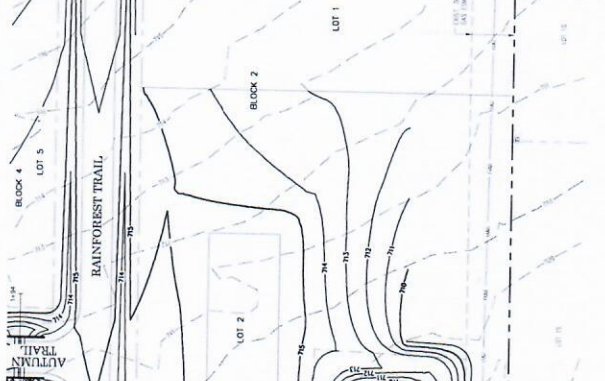
BENCHMARKS:
 CP 1: 23708125 ELEV. 751.83'
 CP 2: 23708154 ELEV. 741.07'
 CP 3: 23708185 ELEV. 710.92'
 CP 4: 23708208 ELEV. 710.92'
 CP 5: 23708247 ELEV. 710.92'



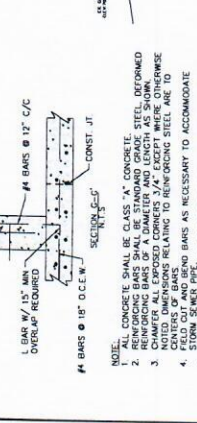
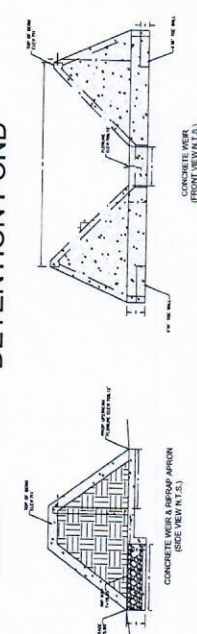
| NO. | DATE | REVISION DESCRIPTION |
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NOTE:
 1. INTERIOR SLOPES AS WELL AS BOTTOM OF DRAINAGE CHANNELS SHALL BE SLOPED WITH CASTAL BERMUDA GRASS.
 2. ALL SLOPES SHALL BE ESTABLISHED AND MAINTAINED UNTIL VEGETATION IS ESTABLISHED.
 3. THE DETENTION OUTFALL SHALL BE MAINTAINED BY OWNERS OF LOT 2 AND LOT 3.



DETENTION POND



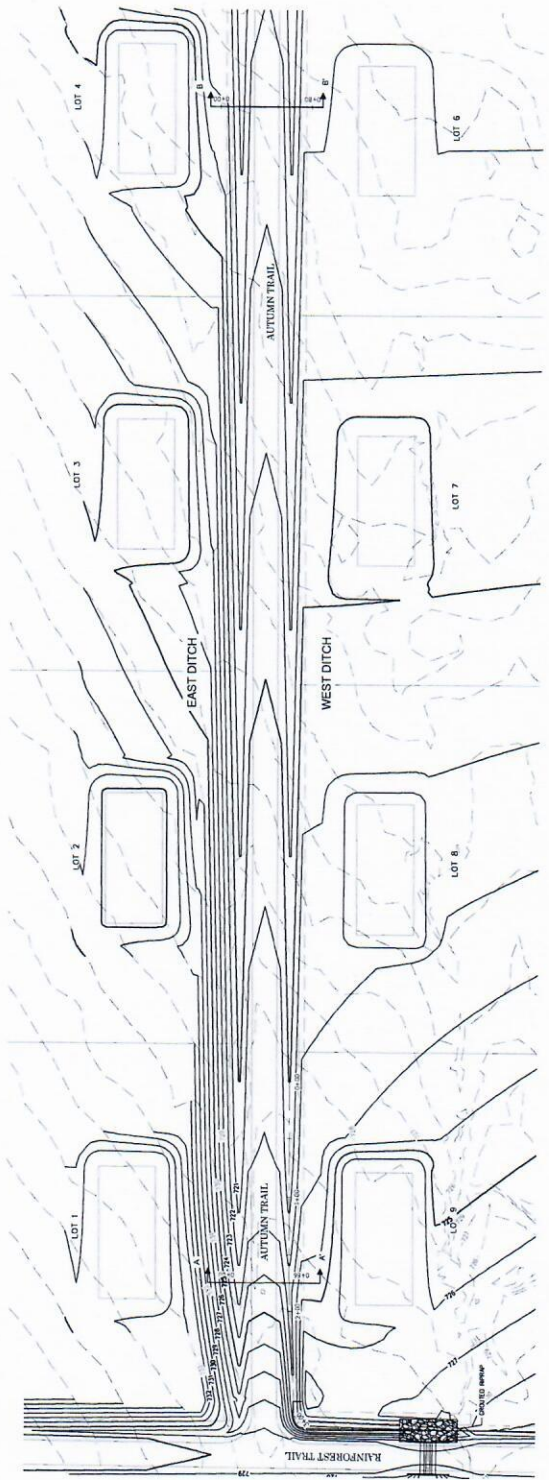
| LINE | LENGTH (FT) | AREA (SQ FT) | DISCHARGE COEFFICIENT |
|------|-------------|--------------|-----------------------|
| 1 | 206.52 | 2.38 | 2.01 |
| 2 | 206.52 | 8.42 | 4.04 |
| 3 | 206.52 | 33.30 | 10.25 |
| 4 | 207.12 | 41.77 | 12.86 |
| 5 | 207.72 | 51.79 | 15.68 |
| 6 | 208.32 | 63.42 | 18.81 |
| 7 | 208.92 | 76.65 | 22.26 |
| 8 | 209.52 | 91.48 | 26.04 |
| 9 | 210.12 | 107.91 | 30.16 |
| 10 | 210.72 | 125.94 | 34.62 |
| 11 | 211.32 | 145.57 | 39.44 |
| 12 | 211.92 | 166.80 | 44.62 |
| 13 | 212.52 | 189.63 | 50.16 |
| 14 | 213.12 | 214.06 | 56.06 |
| 15 | 213.72 | 240.09 | 62.32 |
| 16 | 214.32 | 267.72 | 68.94 |
| 17 | 214.92 | 296.95 | 75.92 |
| 18 | 215.52 | 327.78 | 83.26 |
| 19 | 216.12 | 359.21 | 90.96 |
| 20 | 216.72 | 392.24 | 99.02 |
| 21 | 217.32 | 426.87 | 107.44 |
| 22 | 217.92 | 463.10 | 116.22 |
| 23 | 218.52 | 500.93 | 125.36 |
| 24 | 219.12 | 540.36 | 134.86 |
| 25 | 219.72 | 581.39 | 144.72 |
| 26 | 220.32 | 624.02 | 154.94 |
| 27 | 220.92 | 668.25 | 165.52 |
| 28 | 221.52 | 714.08 | 176.46 |
| 29 | 222.12 | 761.51 | 187.76 |
| 30 | 222.72 | 810.54 | 199.42 |
| 31 | 223.32 | 861.17 | 211.44 |
| 32 | 223.92 | 913.40 | 223.82 |
| 33 | 224.52 | 967.23 | 236.56 |
| 34 | 225.12 | 1022.66 | 249.66 |
| 35 | 225.72 | 1079.69 | 263.12 |
| 36 | 226.32 | 1138.32 | 276.94 |
| 37 | 226.92 | 1198.55 | 291.12 |
| 38 | 227.52 | 1260.38 | 305.66 |
| 39 | 228.12 | 1323.81 | 320.56 |
| 40 | 228.72 | 1388.84 | 335.82 |
| 41 | 229.32 | 1455.47 | 351.44 |
| 42 | 229.92 | 1523.70 | 367.42 |
| 43 | 230.52 | 1593.53 | 383.76 |
| 44 | 231.12 | 1664.96 | 400.46 |
| 45 | 231.72 | 1737.99 | 417.52 |
| 46 | 232.32 | 1812.62 | 434.94 |
| 47 | 232.92 | 1888.85 | 452.72 |
| 48 | 233.52 | 1966.68 | 470.86 |
| 49 | 234.12 | 2046.11 | 489.36 |
| 50 | 234.72 | 2127.24 | 508.22 |
| 51 | 235.32 | 2209.97 | 527.44 |
| 52 | 235.92 | 2294.30 | 547.02 |
| 53 | 236.52 | 2380.33 | 566.96 |
| 54 | 237.12 | 2468.06 | 587.26 |
| 55 | 237.72 | 2557.49 | 607.92 |
| 56 | 238.32 | 2648.62 | 628.94 |
| 57 | 238.92 | 2741.45 | 650.32 |
| 58 | 239.52 | 2835.98 | 672.06 |
| 59 | 240.12 | 2932.21 | 694.16 |
| 60 | 240.72 | 3030.14 | 716.62 |
| 61 | 241.32 | 3129.77 | 739.44 |
| 62 | 241.92 | 3231.10 | 762.62 |
| 63 | 242.52 | 3334.13 | 786.16 |
| 64 | 243.12 | 3438.86 | 810.06 |
| 65 | 243.72 | 3545.29 | 834.32 |
| 66 | 244.32 | 3653.42 | 858.94 |
| 67 | 244.92 | 3763.15 | 883.92 |
| 68 | 245.52 | 3874.48 | 909.26 |
| 69 | 246.12 | 3987.41 | 934.96 |
| 70 | 246.72 | 4101.94 | 961.02 |
| 71 | 247.32 | 4218.07 | 987.44 |
| 72 | 247.92 | 4335.80 | 1014.22 |
| 73 | 248.52 | 4455.13 | 1041.36 |
| 74 | 249.12 | 4576.06 | 1068.86 |
| 75 | 249.72 | 4698.59 | 1096.72 |
| 76 | 250.32 | 4822.72 | 1124.94 |
| 77 | 250.92 | 4948.45 | 1153.52 |
| 78 | 251.52 | 5075.78 | 1182.46 |
| 79 | 252.12 | 5204.71 | 1211.76 |
| 80 | 252.72 | 5335.24 | 1241.42 |
| 81 | 253.32 | 5467.37 | 1271.44 |
| 82 | 253.92 | 5601.10 | 1301.82 |
| 83 | 254.52 | 5736.53 | 1332.56 |
| 84 | 255.12 | 5873.66 | 1363.66 |
| 85 | 255.72 | 6012.39 | 1395.12 |
| 86 | 256.32 | 6152.72 | 1426.94 |
| 87 | 256.92 | 6294.65 | 1459.12 |
| 88 | 257.52 | 6438.18 | 1491.66 |
| 89 | 258.12 | 6583.31 | 1524.56 |
| 90 | 258.72 | 6730.04 | 1557.82 |
| 91 | 259.32 | 6878.37 | 1591.44 |
| 92 | 259.92 | 7028.30 | 1625.42 |
| 93 | 260.52 | 7179.83 | 1659.76 |
| 94 | 261.12 | 7332.96 | 1694.46 |
| 95 | 261.72 | 7487.69 | 1729.52 |
| 96 | 262.32 | 7644.02 | 1764.94 |
| 97 | 262.92 | 7801.95 | 1800.72 |
| 98 | 263.52 | 7961.48 | 1836.86 |
| 99 | 264.12 | 8122.61 | 1873.36 |
| 100 | 264.72 | 8285.34 | 1910.22 |

| LINE | LENGTH (FT) | AREA (SQ FT) | DISCHARGE COEFFICIENT |
|------|-------------|--------------|-----------------------|
| 101 | 265.32 | 8449.67 | 1947.44 |
| 102 | 265.92 | 8618.20 | 1984.86 |
| 103 | 266.52 | 8788.33 | 2022.62 |
| 104 | 267.12 | 8959.96 | 2060.72 |
| 105 | 267.72 | 9133.19 | 2099.16 |
| 106 | 268.32 | 9308.02 | 2137.94 |
| 107 | 268.92 | 9484.45 | 2177.06 |
| 108 | 269.52 | 9662.48 | 2216.52 |
| 109 | 270.12 | 9842.11 | 2256.32 |
| 110 | 270.72 | 10023.34 | 2296.46 |
| 111 | 271.32 | 10206.17 | 2336.94 |
| 112 | 271.92 | 10390.60 | 2377.76 |
| 113 | 272.52 | 10576.73 | 2418.92 |
| 114 | 273.12 | 10764.46 | 2460.42 |
| 115 | 273.72 | 10953.79 | 2502.26 |
| 116 | 274.32 | 11144.72 | 2544.44 |
| 117 | 274.92 | 11337.25 | 2586.96 |
| 118 | 275.52 | 11531.38 | 2629.82 |
| 119 | 276.12 | 11727.01 | 2673.02 |
| 120 | 276.72 | 11924.24 | 2716.56 |
| 121 | 277.32 | 12123.07 | 2760.44 |
| 122 | 277.92 | 12323.50 | 2804.66 |
| 123 | 278.52 | 12525.63 | 2849.22 |
| 124 | 279.12 | 12729.36 | 2894.12 |
| 125 | 279.72 | 12934.69 | 2939.36 |
| 126 | 280.32 | 13141.62 | 2984.94 |
| 127 | 280.92 | 13350.15 | 3030.86 |
| 128 | 281.52 | 13560.28 | 3077.12 |
| 129 | 282.12 | 13771.91 | 3123.72 |
| 130 | 282.72 | 13985.14 | 3170.66 |
| 131 | 283.32 | 14200.07 | 3217.94 |
| 132 | 283.92 | 14416.70 | 3265.56 |
| 133 | 284.52 | 14635.03 | 3313.52 |
| 134 | 285.12 | 14855.06 | 3361.82 |
| 135 | 285.72 | 15076.79 | 3410.46 |
| 136 | 286.32 | 15299.22 | 3459.44 |
| 137 | 286.92 | 15523.35 | 3508.76 |
| 138 | 287.52 | 15749.08 | 3558.42 |
| 139 | 288.12 | 15976.41 | 3608.42 |
| 140 | 288.72 | 16205.34 | 3658.76 |
| 141 | 289.32 | 16435.87 | 3709.44 |
| 142 | 289.92 | 16667.90 | 3760.46 |
| 143 | 290.52 | 16901.53 | 3811.82 |
| 144 | 291.12 | 17136.76 | 3863.52 |
| 145 | 291.72 | 17373.59 | 3915.56 |
| 146 | 292.32 | 17611.92 | 3967.94 |
| 147 | 292.92 | 17851.75 | 4020.66 |
| 148 | 293.52 | 18093.08 | 4073.72 |
| 149 | 294.12 | 18335.81 | 4127.12 |
| 150 | 294.72 | 18579.94 | 4180.86 |
| 151 | 295.32 | 18825.47 | 4234.94 |
| 152 | 295.92 | 19072.40 | 4289.36 |
| 153 | 296.52 | 19320.73 | 4344.12 |
| 154 | 297.12 | 19570.46 | 4399.22 |
| 155 | 297.72 | 19821.59 | 4454.66 |
| 156 | 298.32 | 20074.12 | 4510.44 |
| 157 | 298.92 | 20328.05 | 4566.56 |
| 158 | 299.52 | 20583.38 | 4623.02 |
| 159 | 300.12 | 20840.11 | 4679.82 |
| 160 | 300.72 | 21098.24 | 4736.96 |
| 161 | 301.32 | 21357.77 | 4794.44 |
| 162 | 301.92 | 21618.70 | 4852.26 |
| 163 | 302.52 | 21880.93 | 4910.42 |
| 164 | 303.12 | 22144.46 | 4968.94 |
| 165 | 303.72 | 22409.29 | 5027.82 |
| 166 | 304.32 | 22675.42 | 5087.06 |
| 167 | 304.92 | 22942.85 | 5146.66 |
| 168 | 305.52 | 23211.58 | 5206.62 |
| 169 | 306.12 | 23481.61 | 5266.94 |
| 170 | 306.72 | 23752.94 | 5327.62 |
| 171 | 307.32 | 24025.57 | 5388.66 |
| 172 | 307.92 | 24299.40 | 5449.96 |
| 173 | 308.52 | 24574.53 | 5511.52 |
| 174 | 309.12 | 24850.86 | 5573.44 |
| 175 | 309.72 | 25128.39 | 5635.72 |
| 176 | 310.32 | 25407.12 | 5698.36 |
| 177 | 310.92 | 25687.15 | 5761.36 |
| 178 | 311.52 | 25968.48 | 5824.72 |
| 179 | 312.12 | 26250.91 | 5888.44 |
| 180 | 312.72 | 26534.54 | 5952.52 |
| 181 | 313.32 | 26819.37 | 6016.96 |
| 182 | 313.92 | 27105.40 | 6081.76 |
| 183 | 314.52 | 27392.63 | 6146.92 |
| 184 | 315.12 | 27681.06 | 6212.44 |
| 185 | 315.72 | 27970.69 | 6278.32 |
| 186 | 316.32 | 28261.42 | 6344.56 |
| 187 | 316.92 | 28553.25 | 6411.16 |
| 188 | 317.52 | 28846.18 | 6478.12 |
| 189 | 318.12 | 29140.21 | 6545.44 |
| 190 | 318.72 | 29435.34 | 6613.12 |
| 191 | 319.32 | 29731.57 | 6681.16 |
| 192 | 319.92 | 30028.90 | 6749.56 |
| 193 | 320.52 | 30327.33 | 6818.32 |
| 194 | 321.12 | 30626.86 | 6887.44 |
| 195 | 321.72 | 30927.49 | 6956.92 |
| 196 | 322.32 | 31229.22 | 7026.76 |
| 197 | 322.92 | 31532.05 | 7096.96 |
| 198 | 323.52 | 31835.98 | 7167.42 |
| 199 | 324.12 | 32141.01 | 7238.14 |
| 200 | 324.72 | 32447.14 | 7309.22 |

| LINE | LENGTH (FT) | AREA (SQ FT) | DISCHARGE COEFFICIENT |
|------|-------------|--------------|-----------------------|
| 201 | 325.32 | 32754.37 | 7380.66 |
| 202 | 325.92 | 33062.80 | 7452.02 |
| 203 | 326.52 | 33372.33 | 7523.72 |
| 204 | 327.12 | 33682.96 | 7595.76 |
| 205 | 327.72 | 33994.69 | 7668.12 |
| 206 | 328.32 | 34307.52 | 7740.82 |
| 207 | 328.92 | 34621.45 | 7813.86 |
| 208 | 329.52 | 34936.48 | 7887.24 |
| 209 | 330 | | |



| NO. | DATE | REVISION DESCRIPTION |
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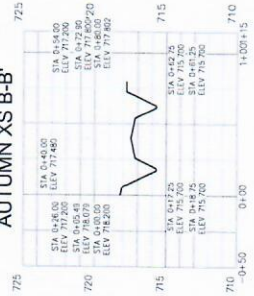
Cross Section A-A'

| DESCRIPTION | UNIT | VALUE |
|---------------------------------|-------|--------|
| 100-yr Runoff Required | cfs | 313.14 |
| R.O.W. Capacity Discharge | cfs | 396.8 |
| Composite Roughness Coefficient | - | 0.018 |
| Channel Slope | ft/ft | 0.008 |
| Flow area | sqft | 59.1 |
| Wetted perimeter | ft | 66.4 |
| Hydraulic radius | ft | 10.7 |
| Normal depth | ft | 65.66 |
| Velocity | ft/s | 2.08 |
| Water Surface Elevation | ft | 724.5 |

Cross Section B-B'

| DESCRIPTION | UNIT | VALUE |
|---------------------------------|-------|--------|
| 100-yr Runoff Required | cfs | 313.14 |
| R.O.W. Capacity Discharge | cfs | 457.9 |
| Composite Roughness Coefficient | - | 0.018 |
| Channel slope | ft/ft | 0.005 |
| Flow area | sqft | 73.2 |
| Wetted perimeter | ft | 67.1 |
| Hydraulic radius | in | 13.1 |
| Top width | ft | 65.8 |
| Normal depth | ft | 2.4 |
| Velocity | ft/s | 6.26 |
| Water Surface Elevation | ft | 718.1 |

AUTUM XS B-B'





| NO. | DATE | REVISION DESCRIPTION |
|-----|------|----------------------|
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BENCHMARKS:

| CP# | N | E | ELEV. |
|-----|------------|------------|---------|
| CP1 | 6544439.35 | 2370291.54 | 751.93' |
| CP2 | 6544439.35 | 2371868.15 | 741.07' |
| CP3 | 6541802.89 | 2373248.74 | 719.92' |



NOTE:
 TRUCKS SHALL UTILIZE ENTRANCE
 TO THE WEST OF PROJECT

