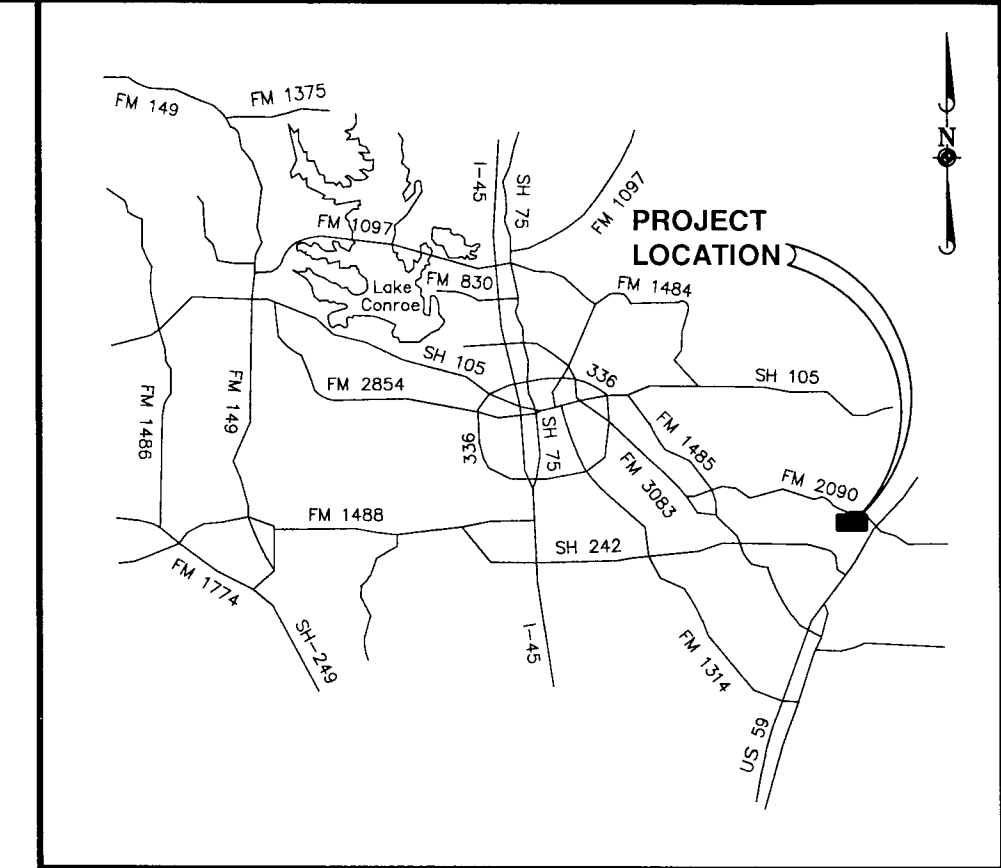


DEVELOPER: TOWNSEND RESERVE,  
LTD., HOUSTON, TEXAS  
(281)671-9048

# CONSTRUCTION OF TOWNSEND RESERVE PHASE 1 CHANNEL AND DETENTION

MONTGOMERY COUNTY MUD 185  
MONTGOMERY COUNTY, TX

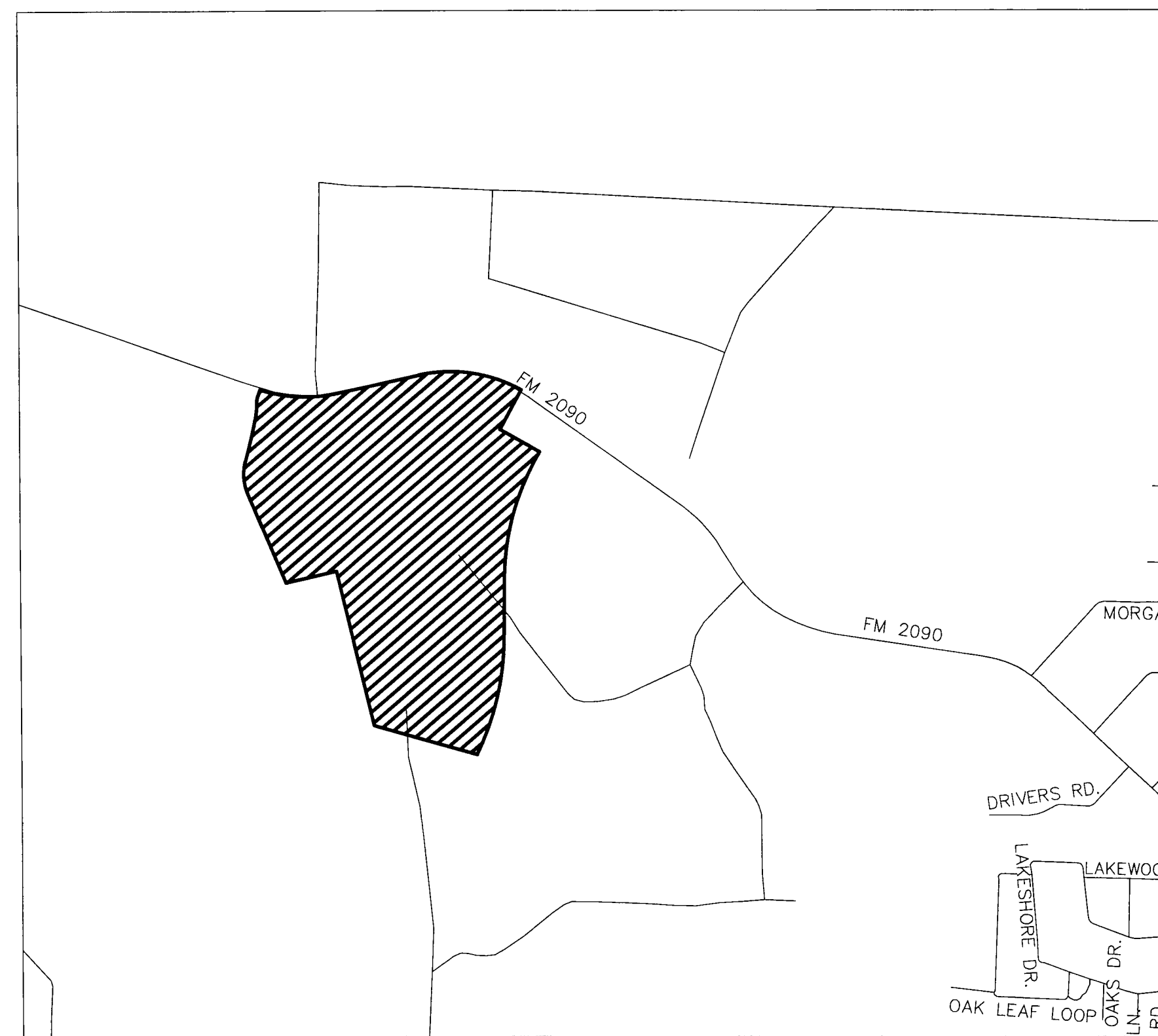


MONTGOMERY COUNTY AREA VICINITY MAP

N.T.S.

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LOCATION MAP

N.T.S.

### BOUNDARY & TOPOGRAPHIC SURVEY:

THE BOUNDARY LINES AND TOPOGRAPHY FOR THIS PROJECT ARE BASED ON A SURVEY PREPARED BY ELEVATION LAND SOLUTIONS, DATED OCTOBER, 2020. THE CONTRACTOR SHALL VERIFY THE EXISTING CONDITIONS PRIOR TO CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY ELEVATION LAND SOLUTIONS IN WRITING OF ANY DIFFERING CONDITIONS. ELEVATION LAND SOLUTIONS HAS NOT VERIFIED THE SURVEY AND IS NOT RESPONSIBLE FOR THE ACCURACY OF THE SURVEY BOUNDARY AND TOPOGRAPHY.

### BENCHMARKS:

SOURCE BENCHMARK:

ELEVATIONS SHOWN HEREON ARE BASED ON NATIONAL GEODETIC SURVEY MONUMENT DESIGNATION CONPORT, PID No. BL2014 HAVING A PUBLISHED ELEVATION OF 234.56 FEET, NAVD 1988. TEMPORARY BENCHMARK A BEING A PK NAIL SET IN ASPHALT LOCATED ON THE NORTH RIGHT-OF-WAY OF FM 242 HAVING THE FOLLOWING INFORMATION:  
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### FLOODPLAIN INFORMATION:

ACCORDING TO THE MAP NO. 48339C0450G & MAP NO. 48339C0600G OF THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAPS FOR MONTGOMERY COUNTY, TEXAS, DATED AUGUST 18, 2014, THE SUBJECT TRACT IS SITUATED WITHIN: UNSHADED ZONE "X"; DEFINED AS AREAS DETERMINED TO BE OUTSIDE THE 500-YEAR FLOOD PLAIN; SHADED ZONE "A"; DEFINED AS AREAS OF 100-YEAR FLOOD WITHOUT BASE FLOOD ELEVATIONS.

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| DATE | REVISION | APP. |
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## TITLE SHEET & SHEET INDEX

ENGINEER'S SEAL  
MITCH WATKINS  
2445 TECHNOLOGY FOREST  
BLVD. SUITE 200  
THE WOODLANDS, TX 77381  
(832) 823-2200



*Mitch Watkins*  
TBPE NO. F-18141 06/29/2021

MONTGOMERY COUNTY  
FIRE MARSHAL

*ilt*  
APPROVED

DATE: 7-2-21

DATE:

MONTGOMERY COUNTY  
ENGINEERING DEPARTMENT

*J. Johnson*  
APPROVED

DATE: 7/7/21

DATE:

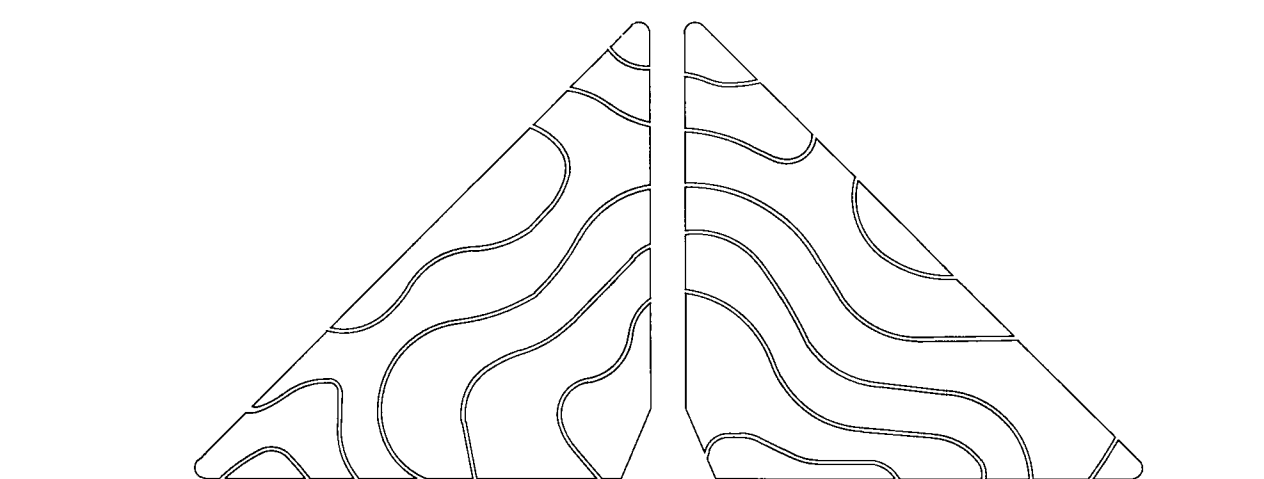
PM: MW DFT: MB

DSN: KK DATE: JUNE 2021

ONE-CALL NOTIFICATION SYSTEM  
**CALL BEFORE YOU DIG!!!**  
(713) 223-4567 (In Houston)  
(New Statewide Number Outside Houston)  
1-800-344-8317

CONTRACTOR SHALL NOTIFY THE MONTGOMERY COUNTY ENGINEERING DEPARTMENT AT LEAST 48 HOURS BEFORE STARTING WORK ON THIS PROJECT. TELEPHONE NO. 936-539-7833

ELEVATION LAND SOLUTIONS, LTD. IS NOT RESPONSIBLE FOR THE SAFETY OF ANY PARTY AT OR ON THE CONSTRUCTION SITE. SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND ANY OTHER PERSON OR ENTITY PERFORMING WORK OR SERVICES. NEITHER THE OWNER NOR ENGINEER ASSUMES ANY RESPONSIBILITY FOR THE JOB SITE SAFETY OF PERSONS ENGAGED IN THE WORK OR THE MEANS OR METHODS OF CONSTRUCTION.



**ELEVATION**  
land solutions  
TBPE REGISTRATION NUMBER F-18141

4842

**GENERAL NOTES:**

- MATERIALS, CONSTRUCTION, AND TESTING TO BE IN ACCORDANCE WITH THE SPECIFICATIONS INDICATED IN THE PLANS AND CONTRACTS AND ARE TO BE INCLUDED IN ALL SETS OF CONSTRUCTION DRAWINGS.
- CONTRACTOR TO OBTAIN ALL DEVELOPMENT AND CONSTRUCTION PERMITS REQUIRED BY ALL APPLICABLE JURISDICTIONS AT HIS EXPENSE PRIOR TO COMMENCEMENT OF WORK, WHERE APPLICABLE.
- CONTRACTOR SHALL GIVE NOTICE TO ALL AUTHORIZED INSPECTORS, SUPERINTENDENTS, OR PERSONS IN CHARGE OF PRIVATE AND PUBLIC UTILITIES OR RAILROADS AFFECTED BY HIS OPERATIONS 48 HOURS PRIOR TO COMMENCEMENT OF WORK LOCATED IN STREET RIGHT OF WAYS AND EASEMENTS.
- ALL EXISTING UNDERGROUND UTILITIES ARE AN APPROXIMATE LOCATION ONLY AND ARE NOT GUARANTEED TO BE COMPLETED OR DEFINITE BUT WERE OBTAINED FROM THE BEST INFORMATION AVAILABLE. **CONTRACTOR HAS SOLE RESPONSIBILITY FOR FIELD VERIFICATION TO DETERMINE EXACT LOCATIONS AND DEPTHS FOR ALL EXISTING FACILITIES SHOWN ON DRAWINGS BEFORE COMMENCING ANY WORK.** THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF THEIR CONSTRUCTION ACTIVITIES WITH THE UTILITY COMPANIES AS TO THE RELOCATION OF THEIR FACILITIES. IF NEEDED, THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ANY AND ALL DAMAGES CAUSED BY THEIR FAILURE TO EXACTLY LOCATE AND PRESERVE ALL UNDERGROUND UTILITIES.
- THE LOCATION OF ALL UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL REQUEST THE EXACT LOCATION OF THESE FACILITIES BY CALLING THE PROSPECTIVE UTILITY COMPANY. AT LEAST 48 HOURS BEFORE COMMENCING WORK, THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE WHICH OCCURS DUE TO HIS FAILURE TO REQUEST THE LOCATION AND PRESERVATION OF THESE UNDERGROUND FACILITIES. ANY DAMAGE TO EXISTING FACILITIES INCURRED AS A RESULT OF CONSTRUCTION OPERATIONS WILL BE REPAIRED BY THE CONTRACTOR AT HIS OWN EXPENSE.
- TEXAS LAW ARTICLE 1436C, PROHIBITS ALL ACTIVITIES IN WHICH PERSONS OR EQUIPMENT MAY COME WITHIN 6 FEET OF ENERGIZED OVERHEAD POWER LINES. FEDERAL REGULATION TITLE 29, PART 1910.1301(1) AND PART 1926.440(A)(1)(5) REQUIRE A MINIMUM CLEARANCE OF 10 FEET FROM THESE FACILITIES. THE ABOVE LAWS CARRY BOTH CRIMINAL AND CIVIL LIABILITIES. WITH CONTRACTORS AND OWNERS BEING LEGALLY RESPONSIBLE FOR THE SAFETY OF WORKERS UNDER THESE LAWS. IF THE CONTRACTOR OR THE OWNER MUST WORK NEAR ENERGIZED OVERHEAD POWER LINES, CALL THE COMPANY FOR THE LINES TO BE DE-ENERGIZED AND/OR MOVED AT CONTRACTORS EXPENSE.
- CONSTRUCTION SHALL COMPLY WITH THE LATEST REVISIONS OF OSHA REGULATIONS AND STATE OF TEXAS LAW CONCERNING TRENCHING AND SHORING. CONTRACTOR SHALL PROVIDE A TRENCH SAFETY SYSTEM TO MEET. AS A MINIMUM, THE REQUIREMENTS OF OSHA SAFETY AND HEALTH REGULATION, PART 1926, SUB-PART B, AS PUBLISHED IN THE FEDERAL REGISTER, VOLUME 54, NO. 209, DATED OCTOBER 31, 1989.
- DETAILS PRESENTED IN THESE PLANS DO NOT EXTEND TO OR INCLUDE DESIGNS OR SYSTEMS PERTAINING TO THE SAFETY OF THE CONTRACTOR OR ITS EMPLOYEES, AGENTS, OR REPRESENTATIVE IN THE PERFORMANCE OF THE WORK. THE CONSTRUCTION CONTRACTOR SHALL PREPARE OR OBTAIN THE APPROPRIATE SAFETY SYSTEMS, INCLUDING THE PLANS AND SPECIFICATIONS REQUIRED BY CHAPTER 756, SUBCHAPTER "C" OF THE TEXAS HEALTH AND SAFETY CODE.
- CONTRACTOR SHALL COVER OPEN EXCAVATIONS WITH ANCHORED STEEL PLATES DURING NON-WORKING HOURS ALONG EXISTING ROADWAYS AND TRAFFIC AREAS.
- ADEQUATE DRAINAGE MUST BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION AND ANY DRAINAGE DITCH OR STRUCTURE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO THE SATISFACTION OF THE PROJECT ENGINEER. ALL CONSTRUCTION RUNOFF SHALL COMPLY WITH STORM WATER MANAGEMENT FOR CONSTRUCTION ACTIVITIES AND THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) REQUIREMENTS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE FLAGMEN, SIGNING, STRIPPING AND WARNING TRAFFIC CONTROL DEVICES, ETC. DURING CONSTRUCTION IN ACCORDANCE WITH THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES". CONTRACTOR SHALL MAINTAIN AT LEAST ONE LANE OF TRAFFIC IN EACH DIRECTION DURING WORKING HOURS AND PROVIDE ALL WEATHER DETOURS AROUND CONSTRUCTION SITE, PROVIDE PUBLIC NOTIFICATION, AND USE UNIFORMED POLICE OFFICERS TO CONTROL TRAFFIC, ESPECIALLY IN HEAVY TRAFFIC LOCATIONS.
- EXISTING PAVEMENT, CURBS, SIDEWALKS, AND DRIVEWAYS DAMAGED OR REMOVED DURING CONSTRUCTION SHALL BE REPLACED TO MONTGOMERY COUNTY STANDARDS. ALL ASPHALT AND CONCRETE DRIVEWAYS EXCAVATED DURING CONSTRUCTION SHALL BE BACKFILLED WITH CEMENT STABILIZED SAND (CSS) AND RETURNED TO EXISTING CONDITIONS OR BETTER. ALL STATE AND COUNTY HIGHWAY PAVEMENT AND RAILROAD RIGHT-OF-WAYS ARE TO BE BORED ACCORDING TO THE RULES, REGULATIONS, AND REQUIREMENTS FOR APPROVAL AND ACCEPTANCE BY RELEVANT AGENCIES.
- EXISTING ROADS AND/OR RIGHTS OF WAY DISTURBED DURING CONSTRUCTION SHALL BE RETURNED AS GOOD, OR BETTER, THAN THE CONDITION PRIOR TO STARTING WORK, UPON COMPLETION OF THE PROJECT.
- ALL SAWCUTS OF EXISTING PAVED SURFACES SHALL BE FULL DEPTH SAWCUTS, UNLESS OTHERWISE SPECIFIED BY JURISDICTIONAL STANDARDS.
- AFTER DISTURBED AREAS WITHIN THE CONSTRUCTION LIMITS HAVE MET THE LINES, GRADES, AND CROSS SECTIONS SHOWN ON THE PLANS, SEEDING SHALL BE PERFORMED IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS TO ESTABLISH ADEQUATE VEGETATION COVERAGE TO AVOID EROSION. IF NO ACTIVITY AFTER 14 DAYS OF INACTIVITY, THE AREA MUST BE HYDROMULCHED TO AVOID EROSION. IF NO PROVISION FOR TURF ESTABLISHMENT IS INCLUDED IN THE PLANS OR SPECIFICATIONS, THE MINIMUM REQUIREMENT FOR THIS ITEM SHALL BE IN ACCORDANCE WITH THE TEXAS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR "SEEDING FOR EROSION CONTROL".
- ALL TRENCHES, INCLUDING TRENCHES FOR LEADS AND STUBS UNDER PAVEMENT AND TO A POINT ONE (1) FOOT BEHIND BACK OF CURB SHALL BE BACKFILLED WITH CEMENT STABILIZED SAND PER MONTGOMERY COUNTY SPECIFICATION TO A POINT IMMEDIATELY BELOW THE SUBGRADE. TRENCHES NOT UNDER PAVEMENT, SHALL BE BACKFILLED WITH SUITABLE EARTH MATERIAL IN 6- INCH LAYERS AND MECHANICALLY COMPACTED TO A DENSITY OF NOT LESS THAN 95 PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE STANDARD PROCTOR COMPACTION TEST (ASTM DESIGNATION D-698/AASHTO 199). MOISTURE CONTENT OF BACKFILL SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE GEOTECHNICAL REPORT.
- CONTRACTOR IS TO INCLUDE PRICE OF ALL BEDDING AND BACKFILL OF PIPES REQUIRED, IN PRICE PER LINEAR FOOT OF PIPE.
- CONTRACTOR TO REMOVE EXISTING PLUGS AND CONNECT TO EXISTING UTILITY LINES AS INDICATED ON PLANS.
- WHEN TRENCH CONDITIONS WARRANT THE USE OF DE-WATERING SYSTEMS, THEIR USE IS TO BE REQUESTED BY THE CONTRACTOR AND APPROVED BY THE OWNER.
- CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING THE MUD, DIRT, AND DEBRIS DEPOSITED ON PROPOSED AND EXISTING PAVEMENT DUE TO HIS CONSTRUCTION ACTIVITY DAILY. ALL EXISTING STREETS AND ADJACENT PAVEMENT AREAS IMPACTED BY CONSTRUCTION ACTIVITIES SHALL BE CLEANED USING A STREET SWEEPER. THIS ACTIVITY WILL BE INCIDENTAL TO ALL OTHER ITEMS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR RELOCATING OR REPLACING ALL EXISTING FENCES INSIDE THE WORK ZONE, TO EXISTING OR BETTER CONDITIONS, EXCEPT FOR THOSE THAT FALL WITHIN A ROAD RIGHT OF WAY OR SPECIFIED BY THE OWNER.
- THE CONTRACTOR IS RESPONSIBLE FOR RELOCATING ALL EXISTING IRRIGATION OUTSIDE OF THE RIGHT OF WAY AND/OR EASEMENT UNLESS OTHERWISE SPECIFIED ON THE PLANS.
- ALL EQUIPMENT SHALL BE REMOVED FROM THE PROJECT SITE ONCE THE PROJECT IS COMPLETED, AS WELL AS, ALL REMAINING DEBRIS WITHIN THE PROJECT SHALL BE REMOVED AND PROPERLY DISPOSED OF AT AN APPROVED DISPOSAL SITE.
- CONTRACTOR SHALL COORDINATE DIRECTLY WITH THE PROVIDER THE PROCUREMENT AND INSTALLATION OF ALL REQUIRED WATER METERS NECESSARY TO COMPLETE THE RESPECTIVE PROJECT. CONTRACTOR SHALL MAKE PAYMENT FOR ANY COSTS ASSOCIATED WITH SUCH METERS AND TRANSFER INTO THE NAME OF THE APPLICABLE HOA, MUD, OR OTHER APPROPRIATE ENTITY, AS REQUIRED BY OWNER.
- CONTRACTOR SHALL COORDINATE DIRECTLY WITH THE PROVIDER THE PROCUREMENT AND INSTALLATION OF ALL REQUIRED ELECTRIC METERS NECESSARY TO COMPLETE THE RESPECTIVE PROJECT. CONTRACTOR SHALL MAKE PAYMENT FOR ANY COSTS ASSOCIATED WITH SUCH METERS AND TRANSFER INTO THE NAME OF THE APPLICABLE HOA, MUD, OR OTHER APPROPRIATE ENTITY, AS REQUIRED BY OWNER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PURCHASING ANY WATER NEEDED DURING CONSTRUCTION FOR TESTING. THE PURCHASE OF WATER FOR CONSTRUCTION TESTING WILL BE CONSIDERED INCIDENTAL TO THE VARIOUS OTHER ITEMS OF WORK.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SECURITY AND SAFETY PROVISIONS REQUIRED TO PROTECT INDIVIDUALS, EQUIPMENT, MATERIALS, AND WORKMANSHIP NECESSARY FOR THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STORAGE OF MATERIALS IN A SAFE AND WORKMANLIKE MANNER TO PREVENT INJURIES DURING AND AFTER WORKING HOURS UNTIL PROJECT COMPLETION.

**STORM SEWER NOTES:**

- STORM SEWER AND LEADS SHALL BE REINFORCED CONCRETE PIPE, ASTM C-76, CLASS III, WITH O-RING RUBBER GASKET JOINT, AND SHALL BE INSTALLED, BEDDED, AND BACKFILLED IN ACCORDANCE WITH THE SPECIFICATIONS INDICATED IN THE PLANS AND CONTRACTS.
  - ALL PROPOSED PIPE STUB OUTS ARE TO BE PLUGGED WITH 8 INCH BRICK WALLS UNLESS OTHERWISE NOTED.
  - A. ALL BOX CULVERTS INSTALLED SHALL BE PLACED ON A MINIMUM OF 6 INCHES OF CEMENT STABILIZED SAND (CEMENT STABILIZED SAND SHALL BE 2 SACK CEMENT PER TON). B. FOR INSTALLATION OF PRE-CAST CONCRETE BOX CULVERTS IN POOR SOIL CONDITIONS, A 7 INCH REINFORCED CONCRETE SLAB SHALL BE INSTALLED. C. FOR INSTALLATION OF MONOLITHIC REINFORCED CONCRETE BOX CULVERTS IN POOR SOIL CONDITIONS, A 4- INCH- THICK CLASS "C" CONCRETE SEAL SLAB SHALL BE INSTALLED, PRIOR TO CONSTRUCTION OF BOX CULVERTS.
  - STORM SEWER MANHOLES, INLETS, AND JUNCTION BOXES SHALL BE STANDARD PRE-CAST, UNLESS OTHERWISE NOTED.
  - ALL INLETS TO BE TYPE "B-B" UNLESS OTHERWISE STATED ON PLANS.
  - ALL STORM SEWER LEADS SHALL BE 18 INCH MINIMUM, UNLESS OTHERWISE INDICATED.
  - GRADE DROP ON LEADS BETWEEN INLETS TO BE A MINIMUM OF 0.20 FOOT. GRADE DROP BETWEEN INLET AND MANHOLES TO BE 0.20 FOOT UNLESS OTHERWISE SHOWN.
  - WHEN MANHOLE FRAME AND COVER IS REQUIRED, USE VULCAN FOUNDRY V-1418-Z FRAME AND COVER (OR APPROVED EQUAL), UNLESS OTHERWISE INDICATED ON THE PLANS.
  - FOR ADJUSTMENT OF MANHOLE LIDS USE STANDARD CONCRETE RINGS.
  - CONCRETE USED FOR ALL POURED-IN-PLACE MANHOLES, INLETS, WINGWALLS, HEADWALLS AND OTHER APPURTENANCES TO BE CLASS "A" CONCRETE WITH 3,000 P.S.I STRENGTH AT 28 DAYS.
  - ALL EXPOSED CORNERS TO BE CHAMFERED 3/4".
  - MONTGOMERY COUNTY MUNICIPAL UTILITY DISTRICT NO. 165 WILL OWN AND MAINTAIN ALL PUBLIC STORM SEWER AND OFF ROAD SWALES. THE HOMEOWNER ASSOCIATION WILL OWN AND MAINTAIN PRIVATE STORM SEWER.
- NOTE: OTHER BACKFILL MATERIALS MAY BE USED, BASED ON THE GEOTECHNICAL REPORT. AS PER HDPE SPECIFICATION, SECTION 6.F BACKFILL MUST BE USED WITH APPROPRIATE COMPACTION.
- SEE SPECIFICATIONS FOR THE USE OF HIGH-DENSITY POLYETHYLENE PIPE FOR STORM DRAINS.
  - MINIMUM HORIZONTAL CLEARANCE BETWEEN ANY STORM PIPE AND BOX SHALL BE AT LEAST 48-INCHES FROM EXTERIOR OF THE STORM PIPE OR BOX TO THE EXTERIOR OF THE EXISTING OR PROPOSED PUBLIC OR PRIVATE UTILITY AND OTHER APPURTENANCES. MINIMUM VERTICAL CLEARANCE BETWEEN ANY STORM PIPE AND BOX SHALL BE AT LEAST 12 -INCHES FROM EXTERIOR OF THE STORM PIPE OR BOX TO THE EXTERIOR OF THE EXISTING OR PROPOSED PUBLIC OR PRIVATE UTILITY AND OTHER APPURTENANCES.
  - ALL DRIVEWAYS WILL BE LOCATED TO AVOID EXISTING CURB INLET STRUCTURES.
  - WHEN STORM SEWER IS UNDER OR WITHIN 7' OF PAVEMENT STORM SEWER LINE IS TO BE BACKFILLED WITH CEMENT STABILIZED SAND TO THE BOTTOM OF THE PAVEMENT'S STABILIZED SUBGRADE. CEMENT STABILIZED SAND TO BE 2 SACKS CEMENT/TON OF SAND.

**LOT GRADING NOTES:**

- LOT AREAS THAT ARE TO RECEIVE FILL SHALL BE PREPARED AS FOLLOWS (NO SEPARATE PAY):
  - AREAS THAT ARE TO RECEIVE FILL WILL BE STRIPPED TO A DEPTH OF 3". STRIPPINGS SHALL BE STOCKPILED AND THEN SPREAD EVENLY ON SURFACE OF FILLED AREAS.
  - PRIOR TO PLACEMENT OF FILL ON STRIPPED AREAS, THE CONTRACTOR SHALL PROOF ROLL USING A PNEUMATIC ROLLER (12 TON OF APPROVED EQUAL) (NO SEPARATE PAY). SHOULD SOFT, UNSTABLE AREAS APPEAR IN THE LOTS, THE CONTRACTOR SHALL REMOVE UNSUITABLE MATERIAL AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL REPLACE THIS WITH A SUITABLE MATERIAL AND COMPACT AS REQUIRED.
- LOT FILL SHALL BE PLACED IN MAXIMUM LOOSE LIFTS OF EIGHT INCHES (8") OR LESS AND COMPACTED TO 95% OF MAXIMUM DENSITY AT OPTIMUM +5% MOISTURE CONTENT AS DETERMINED BY AASHTO TEST METHOD T-99.
- BACK LOT UTILITY EASEMENTS THAT HAVE BEEN CLEARED SHALL BE FILLED UP TO 12 INCHES OF EXCAVATED MATERIAL AND GRADED TO DRAIN. FINISHED SURFACE SHALL BE LEVEL, SMOOTHED AND FINE GRADED.
- ENGINEER WILL PROVIDE APPROXIMATE BACK OF LOT LINE FINISH ELEVATIONS. CONTRACTOR SHALL VERIFY FINAL LOT GRADES AND ELEVATIONS TIED TO PROJECT BENCHMARK. CONTRACTOR SHALL INCLUDE COST IN BID ITEM FOR LOT GRADING.
- FINAL PAYMENT SHALL BE CONTINGENT ON THE ENGINEER'S VERIFICATION THAT LOT GRADING IS IN ACCORDANCE WITH THE GRADING PLAN, AND THAT SOIL COMPACTION TESTS WERE PERFORMED AS REQUIRED.
- ALL LOTS SHALL BE GRADED SO THAT NO PORTION OF ANY LOT SHALL DRAIN ONTO OR ACROSS ANY OTHER LOTS BUT SHALL DRAIN DIRECTLY TO STREET UNLESS DESIGNATED OTHER THAN TYPE "A" GRADING.
- FILL MATERIAL SHALL ONLY BE PLACED ON PROPERLY CLEARED AND PREPARED AREAS. ALL WET AREAS SHALL BE DEMUCKED TO A DEPTH DETERMINED BY THE OWNER'S DESIGNATED REPRESENTATIVE. STRIP A MINIMUM OF 6" OF TOPSOIL AND SCARIFY TO PRODUCE A GOOD BOND WITH THE FILL LIFT.

**SWPPP NOTES:**

- CONTRACTOR SHALL IMPLEMENT INLET PROTECTION DEVICES AND REINFORCED FILTER FABRIC (RFF) BARRIER ALONG ROAD AND SIDE DITCHES AT LOCATIONS SHOWN ON THE TYPICAL STORM WATER POLLUTION PREVENTION (SWPP) PLANS TO KEEP SILT AND OR EXCAVATED MATERIALS FROM ENTERING INTO THE STORM WATER INLETS AND DITCHES EVENTUALLY POLLUTING THE RECEIVING STORM.
- DURING THE EXCAVATION PHASE OF THE PROJECT, CONTRACTOR SHALL SCHEDULE THE WORK IN SHORT SEGMENTS SO THAT EXCAVATION MATERIAL CAN BE QUICKLY HAULED AWAY FROM THE SITE AND TO PREVENT IT FROM STAYING UNCOLLECTED ON THE EXISTING PAVEMENT. ANY LOOSE EXCAVATED MATERIAL WHICH FALLS ON PAVEMENTS OR DRIVEWAYS SHALL BE SWEEPED BACK INTO THE EXCAVATED AREA.
- CONTRACTOR SHALL FOLLOW GOOD HOUSEKEEPING PRACTICES DURING THE CONSTRUCTION OF THE PROJECT, ALWAYS CLEANING UP DIRT AND LOOSE MATERIAL AS CONSTRUCTION PROGRESSES.
- CONTRACTOR TO INSPECT AND MAINTAIN THE AREAS LISTED BELOW AT LEAST ONCE EVERY FOURTEEN (14) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM EVENT OF 0.5 INCHES OR GREATER.
  - DISTURBED AREAS OF THE CONSTRUCTION SITE THAT HAVE NOT BEEN FINALLY STABILIZED.
  - AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION.
  - STRUCTURAL CONTROL MEASURES.
  - LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE.
- CONTRACTOR TO BE RESPONSIBLE FOR MAINTAINING EXISTING DITCHES AND/OR CULVERTS FOR UNOBSTRUCTED DRAINAGE AT ALL TIMES. WHERE SODDING IS DISTURBED BY EXCAVATION OR BACKFILLING OPERATIONS, SUCH AREAS SHALL BE REPLACED BY SEEDING OR SODDING. SLOPES 4:1 OR STEEPER SHALL BE REPLACED BY BLOCK SODDING.
- ADEQUATE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION AND ANY DRAINAGE DITCH OR STRUCTURE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO THE SATISFACTION OF THE OWNING AUTHORITY. ALL CONSTRUCTION STORM RUNOFF SHALL COMPLY WITH THE TEXAS POLLUTION DISCHARGE ELIMINATION SYSTEM (TPDES) REQUIREMENTS.

**BENCHMARKS:**

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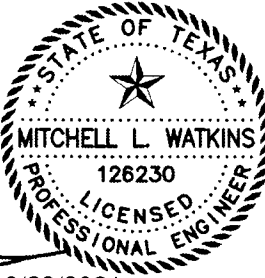
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| DATE | REVISION | APP. |
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**GENERAL NOTES**

ENGINEER'S SEAL  
 MITCH WATKINS  
 2445 TECHNOLOGY FOREST  
 BLVD, SUITE 200  
 THE WOODLANDS, TX 77381  
 (832) 823-2200



*Mitchell L. Watkins*  
 TBPE NO. F-18141 06/29/2021

MONTGOMERY COUNTY  
 ENGINEERING DEPARTMENT

APPROVED

7/7/21  
 DATE

**NOTE: MONTGOMERY COUNTY WILL NOT BE RESPONSIBLE FOR MAINTAINING THE STORM SEWER AND PONDS PROPOSED IN THIS PLAN SET. TOWNSEND RESERVE LTD. ON BEHALF OF MONTGOMERY COUNTY MUNICIPAL UTILITY DISTRICT NO. 185 WILL BE RESPONSIBLE FOR MAINTAINING THE PONDS PROPOSED.**

ELEVATION LAND SOLUTIONS - TOWNSEND RESERVE PHASE 1 CHANNEL DETENTION & MASS GRADING - PROJECT NO. 610-069007.00

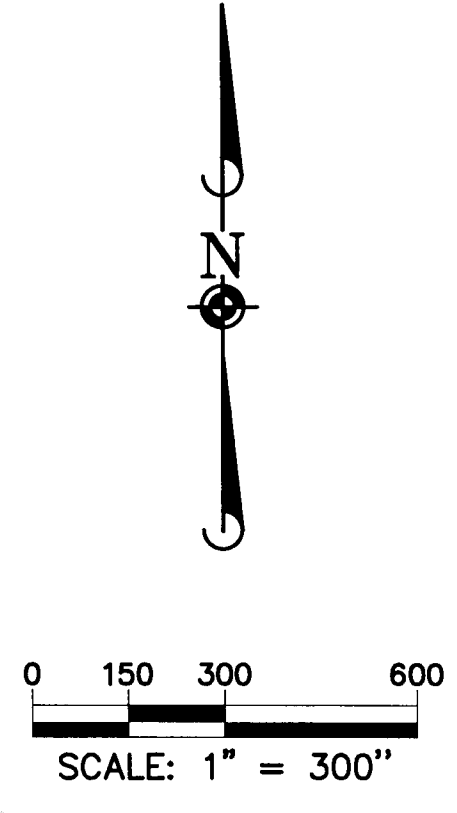


# ABBREVIATIONS

|             |                       |           |  |
|-------------|-----------------------|-----------|--|
| ADJ<br>ARCH | ADJACENT<br>ARCHITECT | PCC<br>PI | POINT OF COMPOUND CURVE<br>POINT OF INTERSECTION |
| B-B         | BACK TO BACK          | PP        | POWER POLE                                       |
| BC          | BACK OF CURB          | PROP      | PROPOSED   |
| B.M.        | BENCHMARK             | PT        | POINT OF TANGENCY                                |
| B.O.        | BLOW OFF              | PVC       | POLYVINYL CHLORIDE PIPE                          |
| CB          | CATCH BASIN           | PVI       | POINT OF VERTICAL CURVATURE                      |
| C           | CENTERLINE            | PVT       | POINT OF VERTICAL INTERSECTION                   |
| CMP         | CORRUGATED METAL PIPE | PWT       | POINT OF VERTICAL TANGENCY                       |
| CTRL        | CONTROL               | PAV       | PAVEMENT   |
| C.O.        | CLEANOUT              | P.A.E.    | PUBLIC ACCESS EASEMENT                           |
| COM.        | COMMUNICATION LINE    | P.U.E.    | PUBLIC UTILITY EASEMENT                          |
| CONC.       | CONCRETE              | R         | RADIUS   |
| CY          | CUBIC YARD            | R.O.W.    | RIGHT-OF-WAY                                     |
| DE          | DRAINAGE EASEMENT     | RCP       | REINFORCED CONCRETE PIPE                         |
| DIA.        | DIAMETER              | REM       | REMOVE   |
| DIP         | DUCTILE IRON PIPE     | REV       | REVERSE  |
| DS          | DOWNSPOUT             | R.R.      | RAILROAD   |
| ELEC.       | ELECTRIC              | RT        | RIGHT  |
| E-E         | EDGE TO EDGE          | SAN       | SANITARY   |
| EL          | ELEVATION             | SEW       | SEWER  |
| ELEV.       | ELEVATION             | SF        | SQUARE FEET                                      |
| EP          | EDGE OF PAVEMENT      | S.L.      | STREET LIGHT                                     |
| ESMT        | EASEMENT              | SSE       | SANITARY SEWER EASEMENT                          |
| EX          | EXISTING              | STA       | STATION  |
| F-F         | FACE TO FACE          | STM       | STORM  |
| F.F.        | FINISHED FLOOR        | STM       | STORM SEWER EASEMENT                             |
| FL          | FLOW LINE             | STD       | STANDARD   |
| FM          | FORCE MAIN            | SW        | SIDEWALK   |
| FV          | FLUSH VALVE           | SY        | SQUARE YARDS                                     |
| G           | GROUND                | T.B.R.    | TO BE REMOVED                                    |
| G/F         | GRADE AT FOUNDATION   | TELE      | TELEPHONE  |
| GV          | GATE VALVE            | TEMP      | TEMPORARY  |
| GW          | GUY WIRE              | TO        | TOP OF CURB                                      |
| HH          | HANDHOLE              | T/F       | TOP OF FOUNDATION                                |
| HYD.        | HYDRANT               | TP        | TOP OF PAVEMENT                                  |
| I.D.        | INSIDE DIAMETER       | TS&V      | TAP SLEEVE & VALVE                               |
| INL         | INLET                 | T/W       | TOP OF SIDEWALK                                  |
| LF          | LINEAR FEET           | T/WALL    | TOP OF WALL                                      |
| LT          | LEFT                  | UE        | TYPICAL  |
| MAX         | MAXIMUM               | UT        | UTILITY EASEMENT                                 |
| MH          | MANHOLE               | WL        | WATERLINE  |
| MIN         | MINIMUM               | WLE       | WATERLINE EASEMENT                               |
| P           | PAVEMENT              | WM        | WATER METER                                      |
| PC          | POINT OF CURVATURE    | W.S.E.    | WATER SURFACE ELEVATION                          |

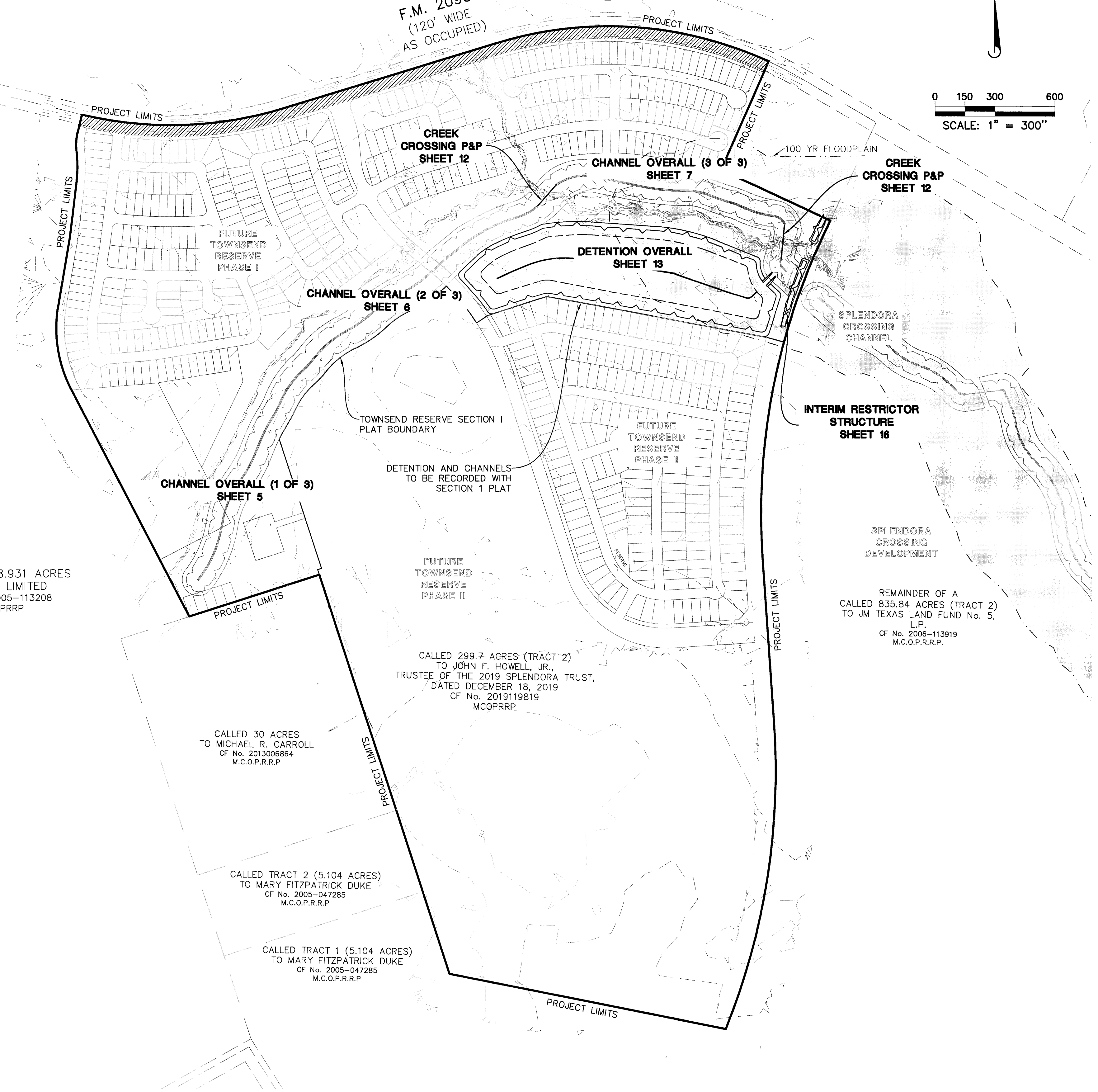


**ELEVATION**  
land solutions  
TBPE REGISTRATION NUMBER F-18141  
2445 TECHNOLOGY FOREST BLVD, SUITE 200  
THE WOODLANDS, TX 77381 832-823-2200

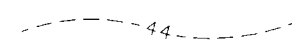
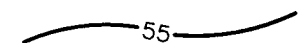
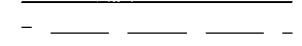



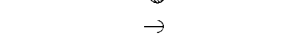
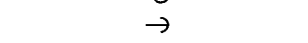
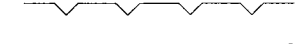

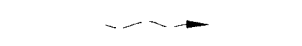



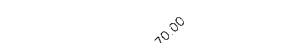
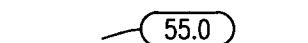
















RESIDUE OF  
CALLED 1,595.09 ACRES  
TO GET LIMITED  
CF No. 2005-029279  
M.C.O.P.R.R.P.


F.M. 2090  
(120' WIDE  
AS OCCUPIED)



# STANDARD SYMBOLS

| EXISTING  | PROPOSED  |
|---|---|
|    |    |
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|  |  |

# LEGEND

 100- YR FLOODPLAIN

CALLLED 828.931 ACRES  
TO CET LIMITED  
CF No. 2005-113208  
MCOPRRP

# BENCHMARKS:

SOURCE BENCHMARK:  
ELEVATIONS SHOWN HEREON ARE BASED ON NATIONAL GEODETIC SURVEY MONUMENT DESIGNATION CONPORT, PID No. BL2014 HAVING A PUBLISHED ELEVATION OF 234.56 FEET; NAVD 1988. TEMPORARY BENCHMARK A BEING A PK NAIL SET IN ASPHALT LOCATED ON THE NORTH RIGHT-OF-WAY OF FM 242 HAVING THE FOLLOWING INFORMATION:  
NORTHING: 10,080,298.21 FEET (GRID)  
EASTING: 3,905,816.99 FEET (GRID)  
ELEVATION: 131.94 FEET  
TEMPORARY BENCHMARK B BEING A SET 5/8-INCH IRON ROD WITH CAP SET LOCATED ON THE NORTH RIGHT-OF-WAY OF FM 242 HAVING THE FOLLOWING INFORMATION:  
NORTHING: 10,080,569.09 FEET (GRID)  
EASTING: 3,904,715.89 FEET (GRID)  
ELEVATION: 118.77 FEET

# FLOODPLAIN INFORMATION:


ACCORDING TO THE MAP NO. 48339C04500 & MAP NO. 48339C06000 OF THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAPS FOR MONTGOMERY COUNTY, TEXAS, DATED AUGUST 18, 2014, THE SUBJECT TRACT IS SITUATED WITHIN: UNSHADED ZONE "X"; DEFINED AS AREAS DETERMINED TO BE OUTSIDE THE 500-YEAR FLOOD PLAIN; SHADED ZONE "X1"; DEFINED AS AREAS OF 100-YEAR FLOOD WITHOUT BASE FLOOD ELEVATIONS.

THIS FLOOD STATEMENT DOES NOT IMPLY THAT THE PROPERTY OR STRUCTURES THEREON WILL BE FREE FROM FLOODING OR FLOOD DAMAGE. ON RARE OCCASIONS FLOODS CAN AND WILL OCCUR AND FLOOD HEIGHTS MAY BE INCREASED BY MAN-MADE OR NATURAL CAUSES. THIS FLOOD STATEMENT SHALL NOT CREATE LIABILITY ON THE PART OF THE SURVEYOR.

| DATE | REVISION | APP. |
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# PROJECT OVERALL

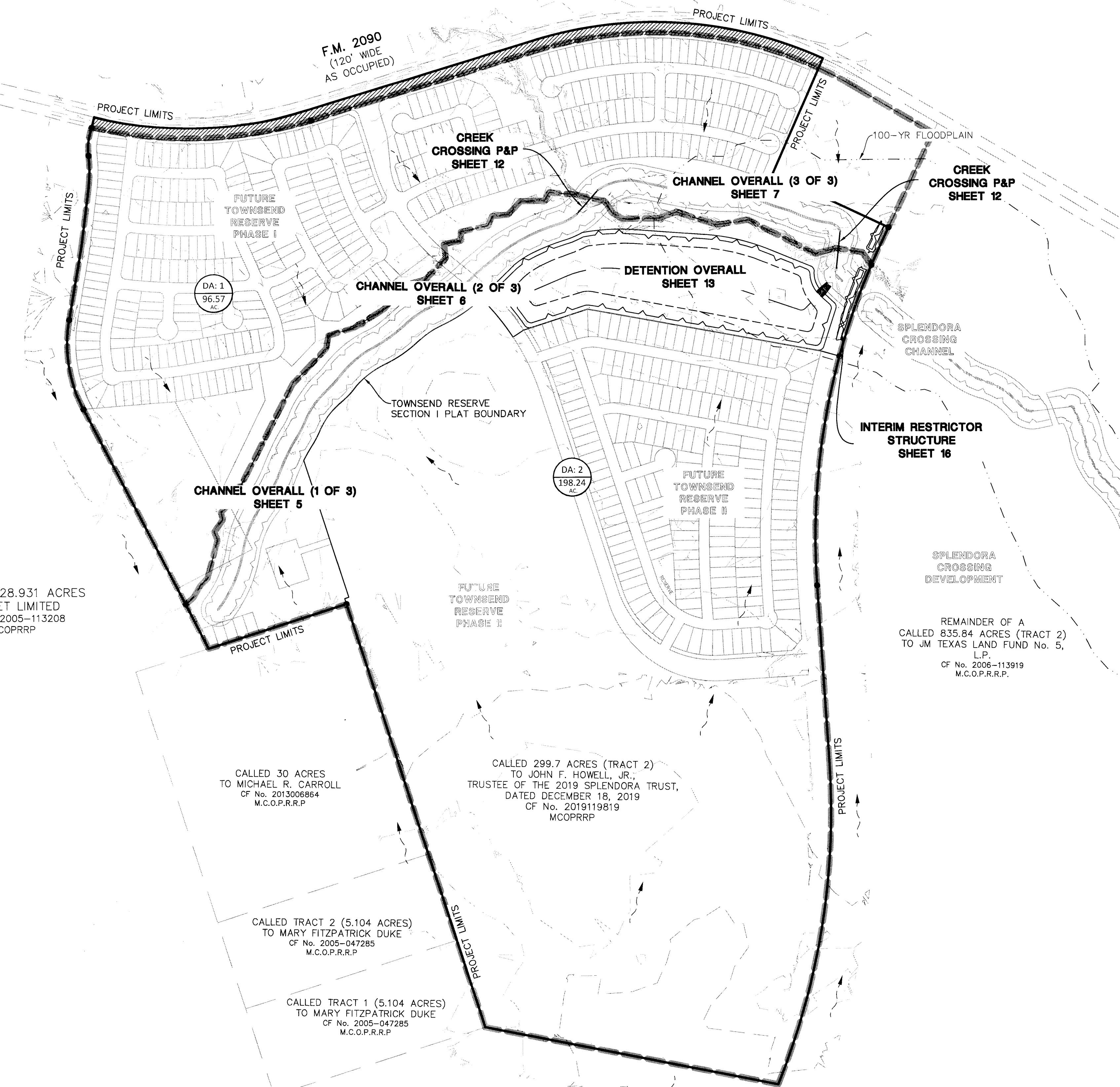
ENGINEER'S SEAL  
MITCH WATKINS  
2445 TECHNOLOGY FOREST  
BLVD. SUITE 200  
THE WOODLANDS, TX 77381  
(832) 823-2200  
06/29/2021  
TBPE NO. F-18141



MONTGOMERY COUNTY  
ENGINEERING DEPARTMENT  
APPROVED  
7/7/21  
DATE

ELEVATION LAND SOLUTIONS - TOWNSEND RESERVE PHASE 1 CHANNEL DETENTION & MASS GRADING - PROJECT NO. 610-089007.00

RESIDUE OF  
CALLED 1,595.09 ACRES  
TO CET LIMITED  
CF No. 2005-029279  
M.C.O.P.R.R.P.



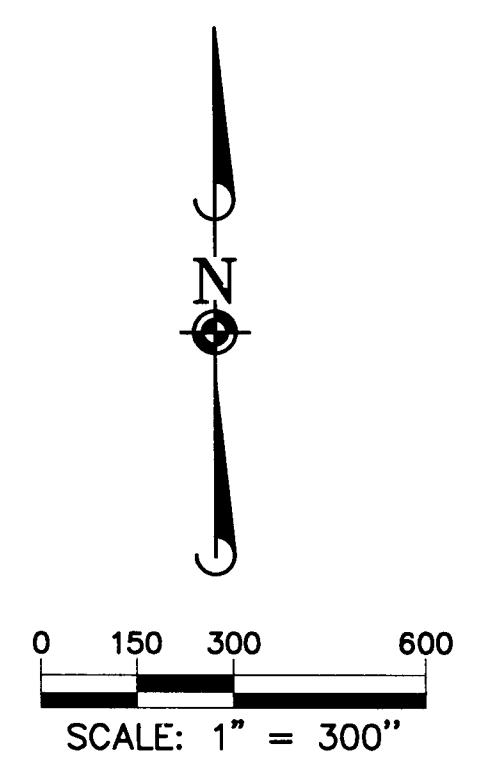
CALLED 828.931 ACRES  
TO CET LIMITED  
CF No. 2005-113208  
MCOPRRP

CALLED 30 ACRES  
TO MICHAEL R. CARROLL  
CF No. 2013006864  
M.C.O.P.R.R.P.

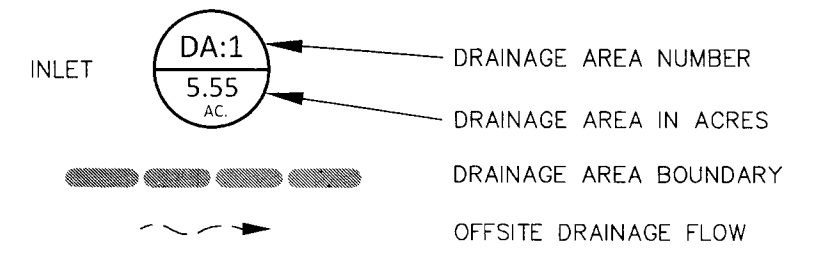
CALLED 299.7 ACRES (TRACT 2)  
TO JOHN F. HOWELL, JR.,  
TRUSTEE OF THE 2019 SPLENDORA TRUST,  
DATED DECEMBER 18, 2019  
CF No. 2019119819  
MCOPRRP

CALLED TRACT 2 (5.104 ACRES)  
TO MARY FITZPATRICK DUKE  
CF No. 2005-047285  
M.C.O.P.R.R.P.

CALLED TRACT 1 (5.104 ACRES)  
TO MARY FITZPATRICK DUKE  
CF No. 2005-047285  
M.C.O.P.R.R.P.



**LEGEND**



**BENCHMARKS:**

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 ELEVATION: 118.77 FEET

**FLOODPLAIN INFORMATION:**

ACCORDING TO THE MAP NO. 48339C0450G & MAP NO. 48339C0500G OF THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAPS FOR MONTGOMERY COUNTY, TEXAS, DATED AUGUST 18, 2014, THE SUBJECT TRACT IS SITUATED WITHIN: UNSHADED ZONE "X"; DEFINED AS AREAS DETERMINED TO BE OUTSIDE THE 500-YEAR FLOOD PLAIN; SHADED ZONE "A"; DEFINED AS AREAS OF 100-YEAR FLOOD WITHOUT BASE FLOOD ELEVATIONS.

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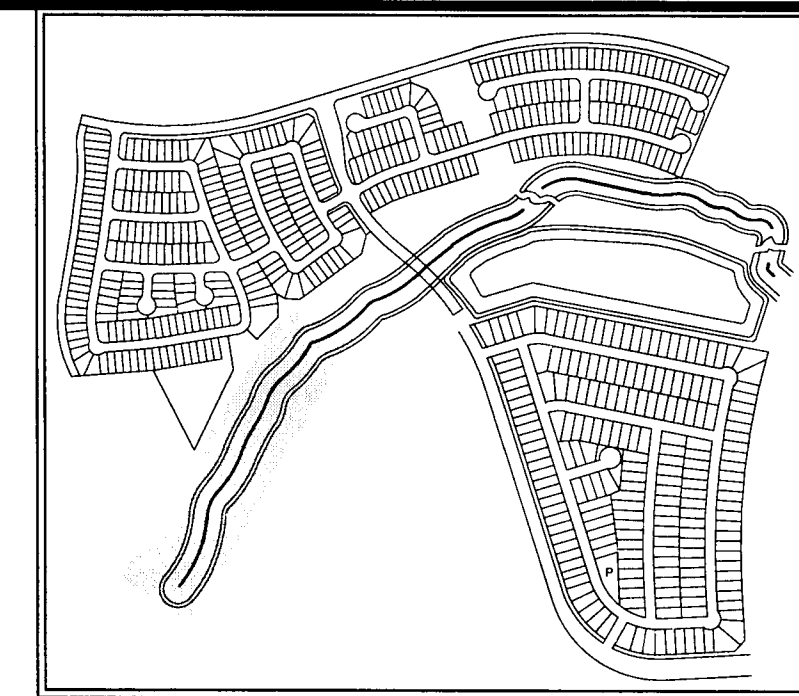
**DRAINAGE SERVICE AREA MAP**

ENGINEER'S SEAL  
 MITCH WATKINS  
 2445 TECHNOLOGY FOREST  
 BLVD, SUITE 200  
 THE WOODLANDS, TX 77381  
 (832) 823-2200  
 MONTGOMERY COUNTY  
 ENGINEERING DEPARTMENT  
 T&E NO. F-18141 06/29/2021

APPROVED  
 DATE 7/7/21

ELEVATION LAND SOLUTIONS - TOWNSEND RESERVE PHASE 1 CHANNEL DETENTION & MASS GRADING - PROJECT NO. 610-069007.00

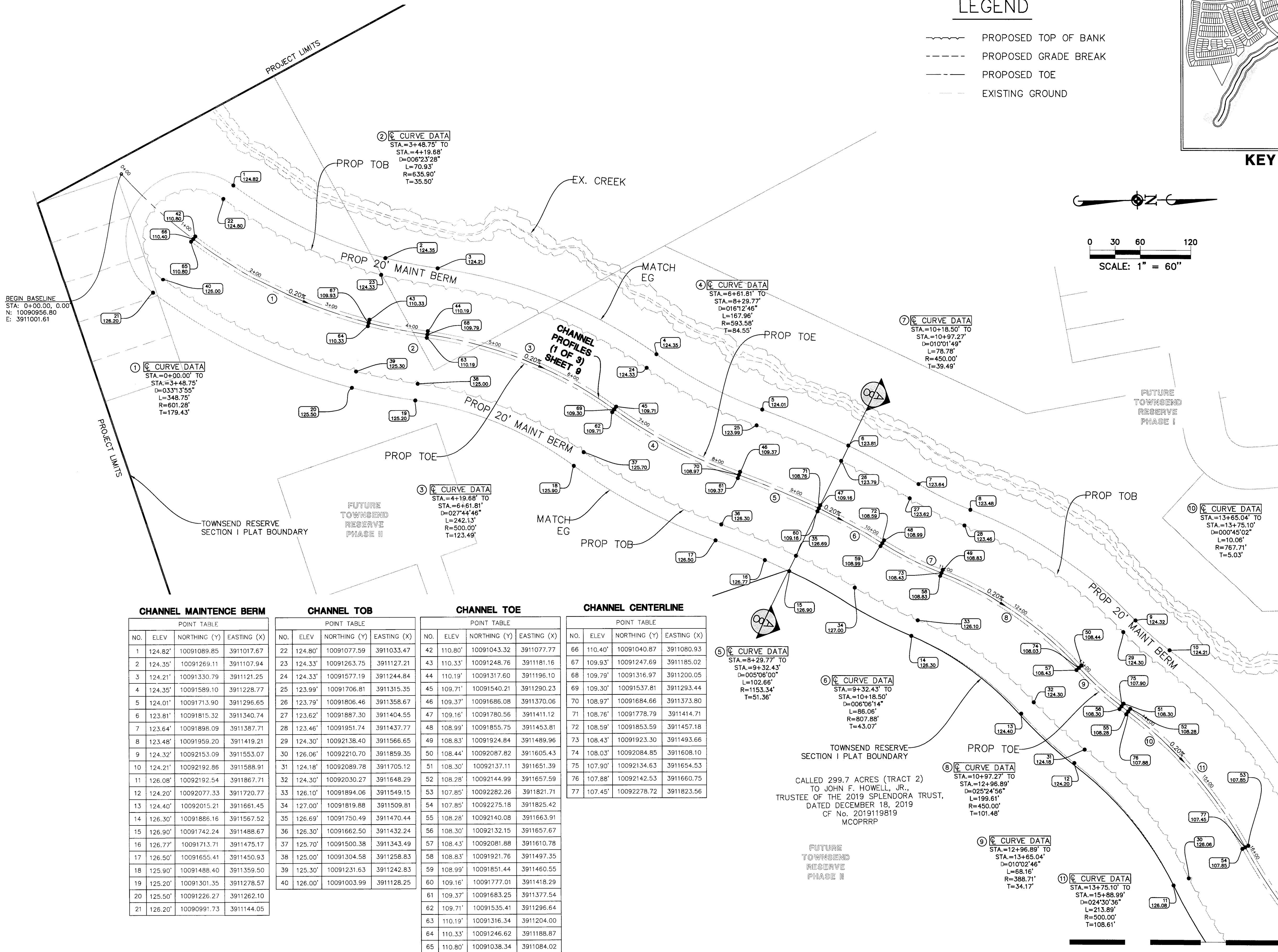
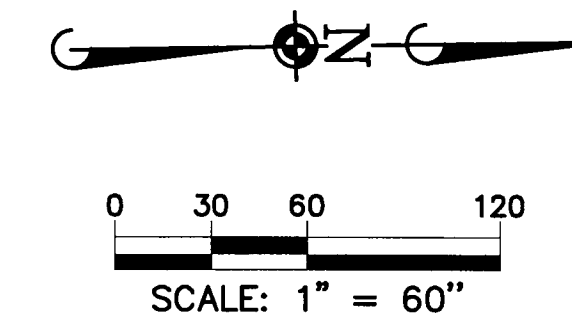




KEY MAP

**LEGEND**

- PROPOSED TOP OF BANK
- PROPOSED GRADE BREAK
- PROPOSED TOE
- EXISTING GROUND



BEGIN BASELINE  
STA: 0+00.00, 0.00  
N: 10090956.80  
E: 3911001.61

| CHANNEL MAINTENANCE BERM |        |             | CHANNEL TOB |        |             | CHANNEL TOE |        |             | CHANNEL CENTERLINE |        |             |
|--------------------------|--------|-------------|-------------|--------|-------------|-------------|--------|-------------|--------------------|--------|-------------|
| NO.                      | ELEV   | EASTING (X) | NO.         | ELEV   | EASTING (X) | NO.         | ELEV   | EASTING (X) | NO.                | ELEV   | EASTING (X) |
| 1                        | 124.82 | 3911017.67  | 22          | 124.80 | 3911033.47  | 42          | 110.80 | 3911077.77  | 66                 | 110.40 | 3911080.93  |
| 2                        | 124.35 | 3911107.94  | 23          | 124.33 | 3911127.21  | 43          | 110.33 | 3911181.16  | 67                 | 109.93 | 3911185.02  |
| 3                        | 124.21 | 3911121.25  | 24          | 124.33 | 3911244.84  | 44          | 110.19 | 3911196.10  | 68                 | 109.79 | 3911200.05  |
| 4                        | 124.35 | 3911228.77  | 25          | 123.99 | 3911315.35  | 45          | 109.71 | 3911290.23  | 69                 | 109.30 | 3911293.44  |
| 5                        | 124.01 | 3911296.65  | 26          | 123.79 | 3911358.67  | 46          | 109.37 | 3911370.06  | 70                 | 108.97 | 3911373.80  |
| 6                        | 123.81 | 3911340.74  | 27          | 123.62 | 3911404.55  | 47          | 109.16 | 3911411.12  | 71                 | 108.76 | 3911414.71  |
| 7                        | 123.64 | 3911387.71  | 28          | 123.46 | 3911437.77  | 48          | 108.99 | 3911453.81  | 72                 | 108.59 | 3911457.18  |
| 8                        | 123.48 | 3911419.21  | 29          | 124.30 | 3911566.65  | 49          | 108.83 | 3911489.96  | 73                 | 108.43 | 3911493.66  |
| 9                        | 124.32 | 3911553.07  | 30          | 126.06 | 3911859.35  | 50          | 108.44 | 3911605.43  | 74                 | 108.03 | 3911608.10  |
| 10                       | 124.21 | 3911588.91  | 31          | 124.18 | 3911705.12  | 51          | 108.30 | 3911651.39  | 75                 | 107.90 | 3911654.53  |
| 11                       | 126.08 | 3911867.71  | 32          | 124.30 | 3911648.29  | 52          | 108.28 | 3911657.59  | 76                 | 107.88 | 3911660.75  |
| 12                       | 124.20 | 3911720.77  | 33          | 126.10 | 3911549.15  | 53          | 107.85 | 3911821.71  | 77                 | 107.45 | 3911823.56  |
| 13                       | 124.40 | 3911861.45  | 34          | 127.00 | 3911509.81  | 54          | 107.85 | 3911825.42  |                    |        |             |
| 14                       | 126.30 | 3911567.52  | 35          | 126.69 | 3911470.44  | 55          | 108.28 | 3911663.91  |                    |        |             |
| 15                       | 126.90 | 3911488.67  | 36          | 126.30 | 3911432.24  | 56          | 108.30 | 3911657.67  |                    |        |             |
| 16                       | 126.77 | 3911475.17  | 37          | 125.70 | 3911343.49  | 57          | 108.43 | 3911610.78  |                    |        |             |
| 17                       | 126.50 | 3911450.93  | 38          | 125.00 | 3911258.83  | 58          | 108.83 | 3911497.35  |                    |        |             |
| 18                       | 125.90 | 3911359.50  | 39          | 125.30 | 3911242.83  | 59          | 108.99 | 3911460.55  |                    |        |             |
| 19                       | 125.20 | 3911278.57  | 40          | 126.00 | 3911128.25  | 60          | 109.16 | 3911418.29  |                    |        |             |
| 20                       | 125.50 | 3911262.10  |             |        |             | 61          | 109.37 | 3911377.54  |                    |        |             |
| 21                       | 126.20 | 3911144.05  |             |        |             | 62          | 109.71 | 3911296.64  |                    |        |             |
|                          |        |             |             |        |             | 63          | 110.19 | 3911204.00  |                    |        |             |
|                          |        |             |             |        |             | 64          | 110.33 | 3911188.87  |                    |        |             |
|                          |        |             |             |        |             | 65          | 110.80 | 3911084.02  |                    |        |             |

- FILL NOTES:**
- EXISTING DRAINAGE SWALES: ALL EXISTING DRAINAGE SWALES SHALL BE FILLED AS SHOWN WITH MATERIAL FROM EXISTING ADJACENT SPOIL BANKS IN MAXIMUM 8" LOOSE LIFTS AND COMPACTED TO 95% PROCTOR DENSITY AS PER AASHTO TEST METHOD T-99.
  - EXISTING DRAINAGE SWALES UNDER PROPOSED CONCRETE PAVEMENT SHALL BE CLEANED, MUCKED OUT AND SCARIFIED TO A MINIMUM DEPTH OF 6" AND FILLED AS SPECIFIED ABOVE IN FILL NOTE NO. 1 NO SEPARATE PAY.
  - ROADWAY EMBANKMENT: STRIP 3" OF VEGETATION FROM AREA TO BE FILLED AND RE-COMPACT SOIL TO 95% PROCTOR DENSITY. PLACE FILL MATERIAL AS SPECIFIED IN FILL NOTE NO. 1

- GENERAL NOTES:**
- ALL ROAD ELEVATIONS SHOWN ARE TOP OF CURB UNLESS OTHERWISE NOTED. PROPOSED TOP OF CURBS ARE BASED ON 6" CURB ELEVATIONS. WHERE 4"x12" CURBS ARE TO BE PLACED, THE ACTUAL TOP OF CURB WILL BE 0.17' LESS THAN THE ELEVATION CALLED OUT ON THE PLANS.
  - ALL ROADWAY DIMENSIONS ARE TO EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.

**BENCHMARKS:**  
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| DATE | REVISION | APP. |
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|      |          |      |

**CHANNEL OVERALL (1 OF 3)**

ENGINEER'S SEAL  
**MITCH WATKINS**  
2445 TECHNOLOGY FOREST BLVD, SUITE 200  
THE WOODLANDS, TX 77381  
(832) 823-2200

TBE NO. F-18141 06/29/2021

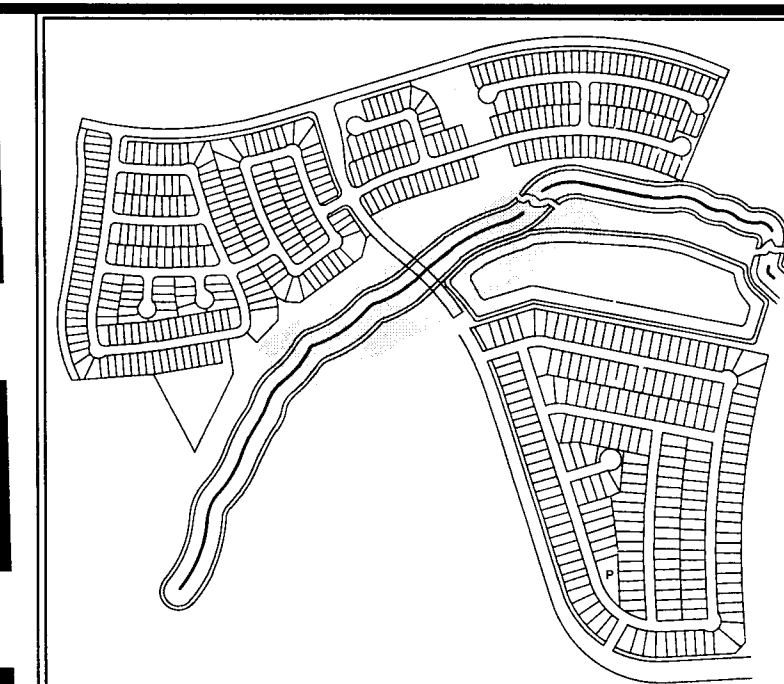
MONTGOMERY COUNTY  
ENGINEERING DEPARTMENT

APPROVED  
7/7/21  
DATE

**SHEET 5 OF 19**

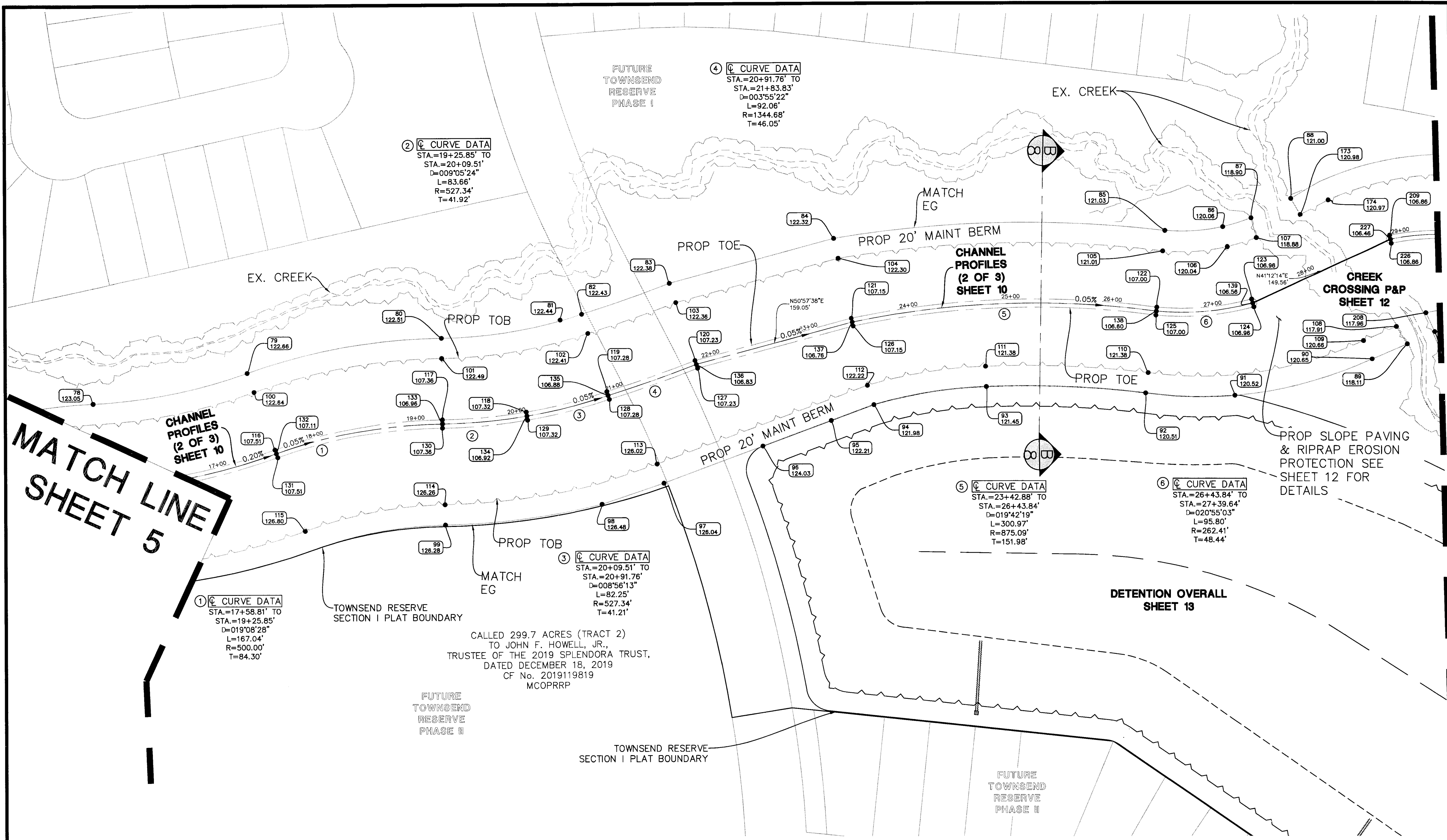
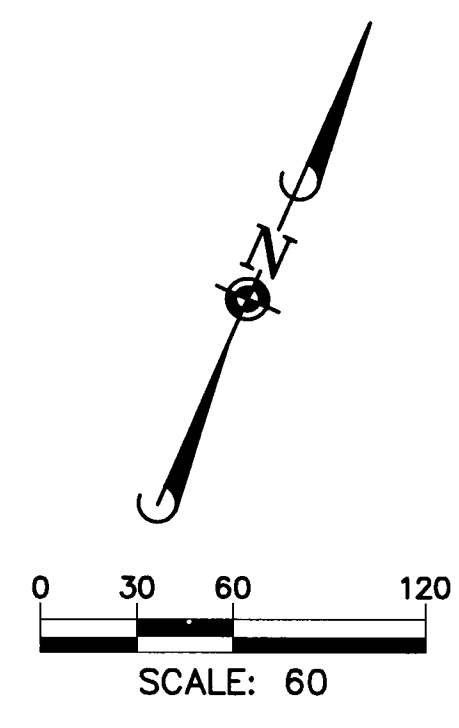
**MATCH LINE SHEET 6**

ELEVATION LAND SOLUTIONS - TOWN SEND RESERVE PHASE I CHANNEL DETENTION & MASS GRADING - PROJECT NO. 610.069007.00



**ELEVATION**  
land solutions  
TBP REGISTRATION NUMBER F-18141  
2445 TECHNOLOGY FOREST BLVD, SUITE 200  
THE WOODLANDS, TX 77381 832-623-2200

**KEY MAP**



**FILL NOTES:**

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- ROADWAY EMBANKMENT: STRIP 3" OF VEGETATION FROM AREA TO BE FILLED AND RE-COMPACT SOIL TO 95% PROCTOR DENSITY. PLACE FILL MATERIAL AS SPECIFIED IN FILL NOTE NO.

**GENERAL NOTES:**

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**BENCHMARKS:**

SOURCE BENCHMARK:  
ELEVATIONS SHOWN HEREON ARE BASED ON NATIONAL GEODETIC SURVEY MONUMENT DESIGNATION CONPORT, PID No. BL2014 HAVING A PUBLISHED ELEVATION OF 234.56 FEET, NAVD 1988. TEMPORARY BENCHMARK A BEING A PK NAIL SET IN ASPHALT LOCATED ON THE NORTH RIGHT-OF-WAY OF FM 242 HAVING THE FOLLOWING INFORMATION:  
NORTHING: 10,080,298.21 FEET (GRID)  
EASTING: 3,905,916.99 FEET (GRID)  
ELEVATION: 131.94 FEET  
TEMPORARY BENCHMARK B BEING A SET 5/8-INCH IRON ROD WITH CAP SET LOCATED ON THE NORTH RIGHT-OF-WAY OF FM 242 HAVING THE FOLLOWING INFORMATION:  
NORTHING: 10,080,569.09 FEET (GRID)  
EASTING: 3,904,715.89 FEET (GRID)  
ELEVATION: 118.77 FEET

**FLOODPLAIN INFORMATION:**

ACCORDING TO THE MAP NO. 48339C0450G & MAP NO. 48339C0800C OF THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAPS FOR MONTGOMERY COUNTY, TEXAS, DATED AUGUST 18, 2014, THE SUBJECT TRACT IS SITUATED WITHIN: UNSHADED ZONE "X", DEFINED AS AREAS DETERMINED TO BE OUTSIDE THE 500-YEAR FLOOD PLAIN; SHADED ZONE "A", DEFINED AS AREAS OF 100-YEAR FLOOD WITHOUT BASE FLOOD ELEVATIONS.

THIS FLOOD STATEMENT DOES NOT IMPLY THAT THE PROPERTY OR STRUCTURES THEREON WILL BE FREE FROM FLOODING OR FLOOD DAMAGE. ON RARE OCCASIONS FLOODS CAN AND WILL OCCUR AND FLOOD HEIGHTS MAY BE INCREASED BY MAN-MADE OR NATURAL CAUSES. THIS FLOOD STATEMENT SHALL NOT CREATE LIABILITY ON THE PART OF THE SURVEYOR.

| DATE | REVISION | APP. |
|------|----------|------|
|      |          |      |
|      |          |      |
|      |          |      |

**CHANNEL OVERALL (2 OF 3)**

ENGINEER'S SEAL  
MITCH WATKINS  
2445 TECHNOLOGY FOREST  
BLVD. SUITE 200  
THE WOODLANDS, TX 77381  
(832) 823-2200  
TBP REG. NO. F-18141  
06/29/2021

MONTGOMERY COUNTY  
ENGINEERING DEPARTMENT  
APPROVED  
7/7/21  
DATE

**CHANNEL MAINTENANCE BERM**

| POINT TABLE |         |              |             |  |
|-------------|---------|--------------|-------------|--|
| NO.         | ELEV    | NORTHING (Y) | EASTING (X) |  |
| 78          | 123.05' | 10092349.48  | 3911776.38  |  |
| 79          | 122.66' | 10092438.52  | 3911902.89  |  |
| 80          | 122.51' | 10092547.27  | 3912063.97  |  |
| 81          | 122.44' | 10092610.75  | 3912163.32  |  |
| 82          | 122.43' | 10092624.43  | 3912180.41  |  |
| 83          | 122.38' | 10092687.18  | 3912247.20  |  |
| 84          | 122.32' | 10092792.80  | 3912377.45  |  |
| 85          | 121.03' | 10092931.94  | 3912672.30  |  |
| 86          | 120.06' | 10092958.47  | 3912722.93  |  |
| 87          | 118.90' | 10092977.70  | 3912744.85  |  |
| 88          | 121.00' | 10093010.94  | 3912772.82  |  |
| 89          | 118.11' | 10092926.49  | 3912935.47  |  |
| 90          | 120.65' | 10092898.82  | 3912909.78  |  |
| 91          | 120.52' | 10092811.01  | 3912800.90  |  |
| 92          | 120.51' | 10092777.54  | 3912719.63  |  |
| 93          | 121.45' | 10092719.70  | 3912573.84  |  |
| 94          | 121.98' | 10092658.63  | 3912479.89  |  |
| 95          | 122.21' | 10092627.31  | 3912447.75  |  |
| 96          | 124.03' | 10092577.21  | 3912396.31  |  |
| 97          | 126.04' | 10092504.64  | 3912321.81  |  |
| 98          | 126.48' | 10092461.16  | 3912274.43  |  |
| 99          | 126.28' | 10092380.47  | 3912141.78  |  |

**CHANNEL TOB**

| POINT TABLE |         |              |             |  |
|-------------|---------|--------------|-------------|--|
| NO.         | ELEV    | NORTHING (Y) | EASTING (X) |  |
| 100         | 122.64' | 10092424.03  | 3911916.68  |  |
| 101         | 122.49' | 10092529.07  | 3912072.25  |  |
| 102         | 122.41' | 10092609.53  | 3912193.76  |  |
| 103         | 122.36' | 10092672.33  | 3912260.65  |  |
| 104         | 122.30' | 10092776.65  | 3912389.29  |  |
| 105         | 121.01' | 10092912.90  | 3912678.42  |  |
| 106         | 120.04' | 10092942.43  | 3912734.87  |  |
| 107         | 118.88' | 10092962.01  | 3912757.47  |  |
| 108         | 117.91' | 10092937.86  | 3912918.73  |  |
| 109         | 120.66' | 10092911.93  | 3912894.67  |  |
| 110         | 121.38' | 10092796.71  | 3912713.94  |  |
| 111         | 121.38' | 10092737.66  | 3912565.05  |  |
| 112         | 122.22' | 10092673.45  | 3912466.44  |  |
| 113         | 126.02' | 10092519.10  | 3912308.00  |  |
| 114         | 126.26' | 10092398.61  | 3912133.36  |  |
| 115         | 126.80' | 10092319.21  | 3912017.80  |  |

**CHANNEL TOE**

| POINT TABLE |         |              |             |  |
|-------------|---------|--------------|-------------|--|
| NO.         | ELEV    | NORTHING (Y) | EASTING (X) |  |
| 116         | 107.51' | 10092380.22  | 3911958.40  |  |
| 117         | 107.36' | 10092473.99  | 3912097.30  |  |
| 118         | 107.32' | 10092514.20  | 3912169.84  |  |
| 119         | 107.28' | 10092564.45  | 3912234.12  |  |
| 120         | 107.23' | 10092627.38  | 3912301.27  |  |
| 121         | 107.15' | 10092727.77  | 3912425.06  |  |
| 122         | 107.00' | 10092859.58  | 3912695.54  |  |
| 123         | 106.96' | 10092904.80  | 3912777.65  |  |
| 124         | 106.96' | 10092898.61  | 3912782.71  |  |
| 125         | 107.00' | 10092851.94  | 3912697.91  |  |
| 126         | 107.15' | 10092721.41  | 3912429.92  |  |
| 127         | 107.23' | 10092621.44  | 3912306.64  |  |
| 128         | 107.28' | 10092558.49  | 3912239.46  |  |
| 129         | 107.32' | 10092507.54  | 3912174.26  |  |
| 130         | 107.36' | 10092466.71  | 3912100.61  |  |
| 131         | 107.51' | 10092374.42  | 3911963.91  |  |
| 209         | 106.86' | 10093017.49  | 3912876.39  |  |
| 226         | 106.86' | 10093010.96  | 3912881.01  |  |

**CHANNEL CENTERLINE**

| POINT TABLE |         |              |             |  |
|-------------|---------|--------------|-------------|--|
| NO.         | ELEV    | NORTHING (Y) | EASTING (X) |  |
| 132         | 107.11' | 10092377.32  | 3911961.16  |  |
| 133         | 106.96' | 10092470.35  | 3912098.95  |  |
| 134         | 106.92' | 10092510.87  | 3912172.05  |  |
| 135         | 106.88' | 10092561.47  | 3912236.79  |  |
| 136         | 106.83' | 10092624.41  | 3912303.96  |  |
| 137         | 106.76' | 10092724.59  | 3912427.49  |  |
| 138         | 106.60' | 10092855.76  | 3912696.72  |  |
| 139         | 106.56' | 10092901.70  | 3912780.18  |  |
| 227         | 106.46' | 10093014.23  | 3912878.70  |  |

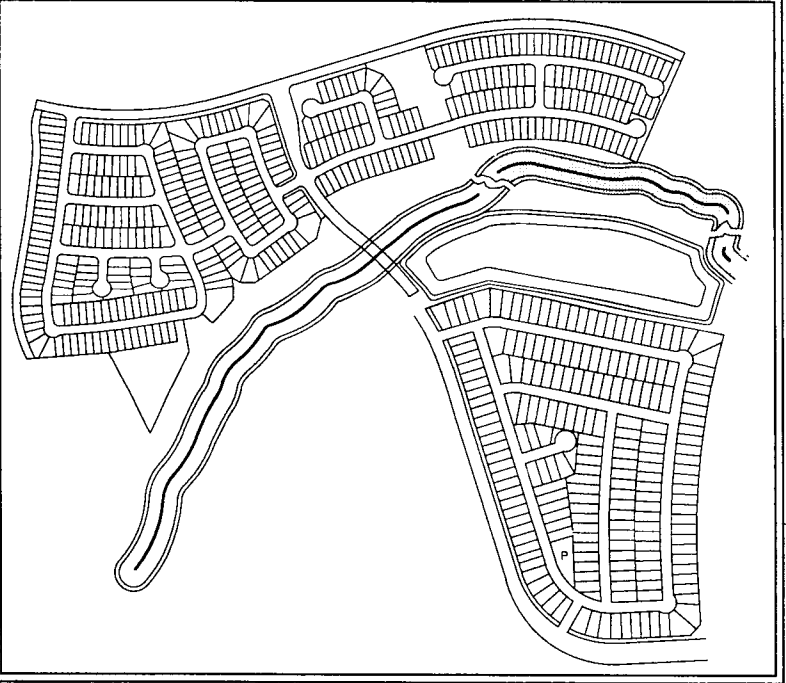
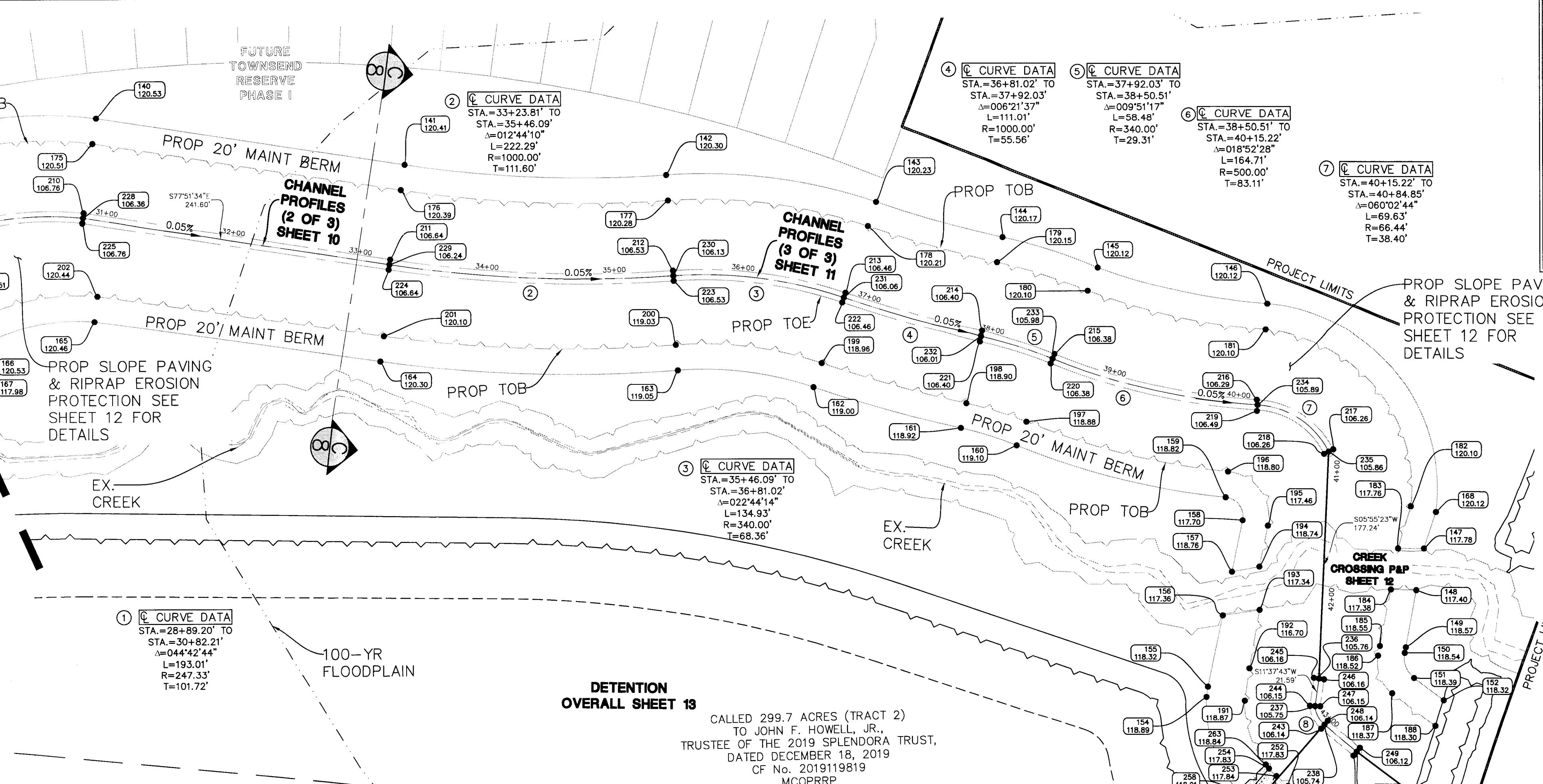
**LEGEND**

- PROPOSED TOP OF BANK
- PROPOSED GRADE BREAK
- PROPOSED TOE
- EXISTING GROUND

ELEVATION LAND SOLUTIONS - TOWNSEND RESERVE PHASE I CHANNEL DETENTION & MASS GRADING - PROJECT NO. 610-069007.00



MATCH LINE SHEET 9



**ELEVATION**  
land solutions  
TBPE REGISTRATION NUMBER F-18141  
2445 TECHNOLOGY FOREST BLVD, SUITE 200  
THE WOODLANDS, TX 77381 823-823-2200

- FILL NOTES:**
- EXISTING DRAINAGE SWALES: ALL EXISTING DRAINAGE SWALES SHALL BE FILLED AS SHOWN WITH MATERIAL FROM EXISTING ADJACENT SPOIL BANKS IN MAXIMUM 8" LOOSE LIFTS AND COMPACTED TO 95% PROCTOR DENSITY AS PER AASHTO TEST METHOD T-99.
  - EXISTING DRAINAGE SWALES: ALL EXISTING DRAINAGE SWALES UNDER PROPOSED CONCRETE PAVEMENT SHALL BE CLEANED, MUCKED OUT AND SCARIFIED TO A MINIMUM DEPTH OF 6" AND FILLED AS SPECIFIED ABOVE IN FILL NOTE NO. 1 NO SEPARATE PAY.
  - ROADWAY EMBANKMENT: STRIP 3" OF VEGETATION FROM AREA TO BE FILLED AND RE-COMPACT SOIL TO 95% PROCTOR DENSITY. PLACE FILL MATERIAL AS SPECIFIED IN FILL NOTE NO. 1
- GENERAL NOTES:**
- ALL ROAD ELEVATIONS SHOWN ARE TOP OF CURB UNLESS OTHERWISE NOTED. PROPOSED TOP OF CURBS ARE BASED ON 6" CURB ELEVATIONS, WHERE 4"x12" CURBS ARE TO BE PLACED, THE ACTUAL TOP OF CURB WILL BE 0.17' LESS THAN THE ELEVATION CALLED OUT ON THE PLANS.
  - ALL ROADWAY DIMENSIONS ARE TO EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
- BENCHMARKS:**
- SOURCE BENCHMARK:  
ELEVATIONS SHOWN HEREON ARE BASED ON NATIONAL GEODETIC SURVEY MONUMENT DESIGNATION CONPT, PID No. BL2014 HAVING A PUBLISHED ELEVATION OF 234.56 FEET; NAVD 1988. TEMPORARY BENCHMARK A BEING A PK NAIL SET IN ASPHALT LOCATED ON THE NORTH RIGHT-OF-WAY OF FM 242 HAVING THE FOLLOWING INFORMATION:  
NORTHING: 10,080,298.21 FEET (GRID)  
EASTING: 3,905,916.98 FEET (GRID)  
ELEVATION: 131.94 FEET  
TEMPORARY BENCHMARK B BEING A SET 5/8-INCH IRON ROD WITH CAP SET LOCATED ON THE NORTH RIGHT-OF-WAY OF FM 242 HAVING THE FOLLOWING INFORMATION:  
NORTHING: 10,080,569.09 FEET (GRID)  
EASTING: 3,904,715.89 FEET (GRID)  
ELEVATION: 118.77 FEET
- FLOODPLAIN INFORMATION:**
- ACCORDING TO THE MAP NO. 48339C0450G & MAP NO. 48339C0800G OF THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAPS FOR MONTGOMERY COUNTY, TEXAS, DATED AUGUST 18, 2014, THE SUBJECT TRACT IS SITUATED WITHIN: UNSHADED ZONE "X", DEFINED AS AREAS DETERMINED TO BE OUTSIDE THE 500-YEAR FLOOD PLAIN; SHADED ZONE "A", DEFINED AS AREAS OF 100-YEAR FLOOD WITHOUT BASE FLOOD ELEVATIONS.

**DETENTION OVERALL SHEET 13**  
CALLED 299.7 ACRES (TRACT 2)  
TO JOHN F. HOWELL, JR.,  
TRUSTEE OF THE 2019 SPLENDORA TRUST,  
DATED DECEMBER 18, 2019  
CF No. 2019119819  
MCOPRRP

**CHANNEL MAINTENCE BERM**

| NO. | ELEV   | NORTHING (Y) | EASTING (X) |
|-----|--------|--------------|-------------|
| 140 | 120.53 | 10093133.98  | 3913076.97  |
| 141 | 120.41 | 10093082.81  | 3913314.87  |
| 142 | 120.30 | 10093062.26  | 3913518.14  |
| 143 | 120.23 | 10093031.38  | 3913680.42  |
| 144 | 120.17 | 10092998.18  | 3913777.06  |
| 145 | 120.12 | 10092970.08  | 3913849.79  |
| 146 | 120.12 | 10092933.94  | 3913980.07  |
| 147 | 117.78 | 10092736.44  | 3914090.59  |
| 148 | 117.40 | 10092704.22  | 3914082.60  |
| 149 | 118.57 | 10092660.24  | 3914071.70  |
| 150 | 118.54 | 10092655.94  | 3914070.60  |
| 151 | 118.39 | 10092636.00  | 3914076.70  |
| 152 | 118.32 | 10092617.33  | 3914098.83  |
| 153 | 117.91 | 10092541.52  | 3913946.55  |
| 154 | 118.89 | 10092630.41  | 3913914.17  |
| 155 | 118.32 | 10092638.33  | 3913915.80  |
| 156 | 117.38 | 10092693.16  | 3913930.75  |
| 157 | 118.76 | 10092726.81  | 3913939.93  |
| 158 | 117.70 | 10092766.30  | 3913950.70  |
| 159 | 118.82 | 10092785.07  | 3913938.53  |
| 160 | 119.10 | 10092834.78  | 3913778.19  |
| 161 | 118.92 | 10092850.94  | 3913735.45  |
| 162 | 119.00 | 10092889.66  | 3913622.75  |
| 163 | 119.05 | 10092909.24  | 3913517.97  |
| 164 | 120.30 | 10092930.40  | 3913286.55  |
| 165 | 120.46 | 10092974.94  | 3913066.13  |
| 166 | 120.53 | 10092961.95  | 3912978.05  |
| 167 | 117.98 | 10092948.61  | 3912955.18  |
| 168 | 120.12 | 10092764.37  | 3914101.63  |

**CHANNEL TOB**

| NO. | ELEV   | NORTHING (Y) | EASTING (X) |
|-----|--------|--------------|-------------|
| 175 | 120.51 | 10093114.39  | 3913072.98  |
| 176 | 120.39 | 10093063.25  | 3913310.67  |
| 177 | 120.28 | 10093042.26  | 3913518.35  |
| 178 | 120.21 | 10093012.85  | 3913672.88  |
| 179 | 120.15 | 10092978.93  | 3913771.62  |
| 180 | 120.10 | 10092952.18  | 3913840.88  |
| 181 | 120.10 | 10092914.09  | 3913977.59  |
| 182 | 120.10 | 10092769.91  | 3914082.32  |
| 183 | 117.76 | 10092737.62  | 3914070.28  |
| 184 | 117.38 | 10092705.88  | 3914062.77  |
| 185 | 118.55 | 10092662.45  | 3914051.62  |
| 186 | 118.52 | 10092655.00  | 3914049.70  |
| 187 | 118.37 | 10092625.08  | 3914058.87  |
| 188 | 118.30 | 10092597.42  | 3914091.10  |
| 189 | 118.94 | 10092486.23  | 3914050.07  |
| 190 | 119.42 | 10092455.27  | 3914040.29  |
| 191 | 118.87 | 10092625.80  | 3913943.85  |
| 192 | 116.70 | 10092650.69  | 3913948.97  |
| 193 | 117.34 | 10092695.83  | 3913959.59  |
| 194 | 118.74 | 10092729.58  | 3913961.42  |
| 195 | 117.46 | 10092761.04  | 3913969.99  |
| 196 | 118.80 | 10092804.83  | 3913941.59  |
| 197 | 118.88 | 10092852.82  | 3913786.84  |
| 198 | 118.90 | 10092870.19  | 3913740.89  |
| 199 | 118.96 | 10092908.19  | 3913630.29  |
| 200 | 119.03 | 10092929.24  | 3913517.63  |
| 201 | 120.10 | 10092950.01  | 3913290.51  |
| 202 | 120.44 | 10092994.64  | 3913069.61  |
| 203 | 120.51 | 10092980.04  | 3912969.50  |

**CHANNEL TOE**

| NO. | ELEV   | NORTHING (Y) | EASTING (X) |
|-----|--------|--------------|-------------|
| 210 | 106.76 | 10093060.31  | 3913062.81  |
| 211 | 106.64 | 10093009.48  | 3913299.10  |
| 212 | 106.53 | 10092987.26  | 3913518.92  |
| 213 | 106.46 | 10092961.91  | 3913652.15  |
| 214 | 106.40 | 10092926.00  | 3913756.66  |
| 215 | 106.38 | 10092905.11  | 3913811.94  |
| 216 | 106.29 | 10092859.83  | 3913967.34  |
| 217 | 106.26 | 10092817.52  | 3914024.59  |
| 218 | 106.26 | 10092814.37  | 3914017.24  |
| 219 | 106.49 | 10092850.99  | 3913966.95  |
| 220 | 106.38 | 10092897.89  | 3913808.48  |
| 221 | 106.40 | 10092918.30  | 3913754.49  |
| 222 | 106.46 | 10092954.50  | 3913649.14  |
| 223 | 106.53 | 10092979.26  | 3913519.01  |
| 224 | 106.64 | 10093001.66  | 3913297.42  |
| 225 | 106.76 | 10093052.45  | 3913061.32  |
| 226 | 106.12 | 10092578.17  | 3914025.78  |
| 227 | 106.14 | 10092600.32  | 3914001.93  |
| 228 | 106.15 | 10092618.93  | 3913994.28  |
| 229 | 106.16 | 10092640.45  | 3913998.71  |
| 230 | 106.16 | 10092638.84  | 3914008.54  |
| 231 | 106.15 | 10092618.12  | 3914002.28  |
| 232 | 106.14 | 10092606.10  | 3914007.46  |
| 233 | 106.12 | 10092583.95  | 3914031.16  |

**CHANNEL CENTERLINE**

| NO. | ELEV   | NORTHING (Y) | EASTING (X) |
|-----|--------|--------------|-------------|
| 228 | 106.36 | 10093056.38  | 3913062.07  |
| 229 | 106.24 | 10093005.57  | 3913298.26  |
| 230 | 106.13 | 10092983.26  | 3913518.96  |
| 231 | 106.06 | 10092958.21  | 3913650.64  |
| 232 | 106.01 | 10092922.15  | 3913755.57  |
| 233 | 105.98 | 10092901.50  | 3913810.21  |
| 234 | 105.89 | 10092855.76  | 3913967.67  |
| 235 | 105.86 | 10092815.94  | 3914020.92  |
| 236 | 105.76 | 10092639.65  | 3914002.63  |
| 237 | 105.75 | 10092618.51  | 3913998.27  |
| 238 | 105.74 | 10092603.21  | 3914004.70  |
| 239 | 105.72 | 10092581.06  | 3914028.46  |

**OVERFLOW SWALE**

| NO. | ELEV   | NORTHING (Y) | EASTING (X) |
|-----|--------|--------------|-------------|
| 251 | 118.83 | 10092554.85  | 3913976.24  |
| 252 | 117.83 | 10092557.57  | 3913973.32  |
| 253 | 117.84 | 10092565.76  | 3913964.70  |
| 254 | 117.83 | 10092571.94  | 3913959.37  |
| 255 | 118.91 | 10092530.60  | 3913958.40  |
| 256 | 117.91 | 10092536.25  | 3913952.26  |
| 257 | 117.91 | 10092550.43  | 3913938.16  |
| 258 | 118.91 | 10092555.76  | 3913933.98  |
| 259 | 120.38 | 10092504.16  | 3913933.96  |
| 260 | 118.00 | 10092510.58  | 3913926.92  |
| 261 | 118.00 | 10092524.67  | 3913912.72  |
| 262 | 119.83 | 10092530.88  | 3913907.58  |
| 263 | 118.84 | 10092575.17  | 3913957.01  |

**LEGEND**

- PROPOSED TOP OF BANK
- - - PROPOSED GRADE BREAK
- PROPOSED TOE
- EXISTING GROUND

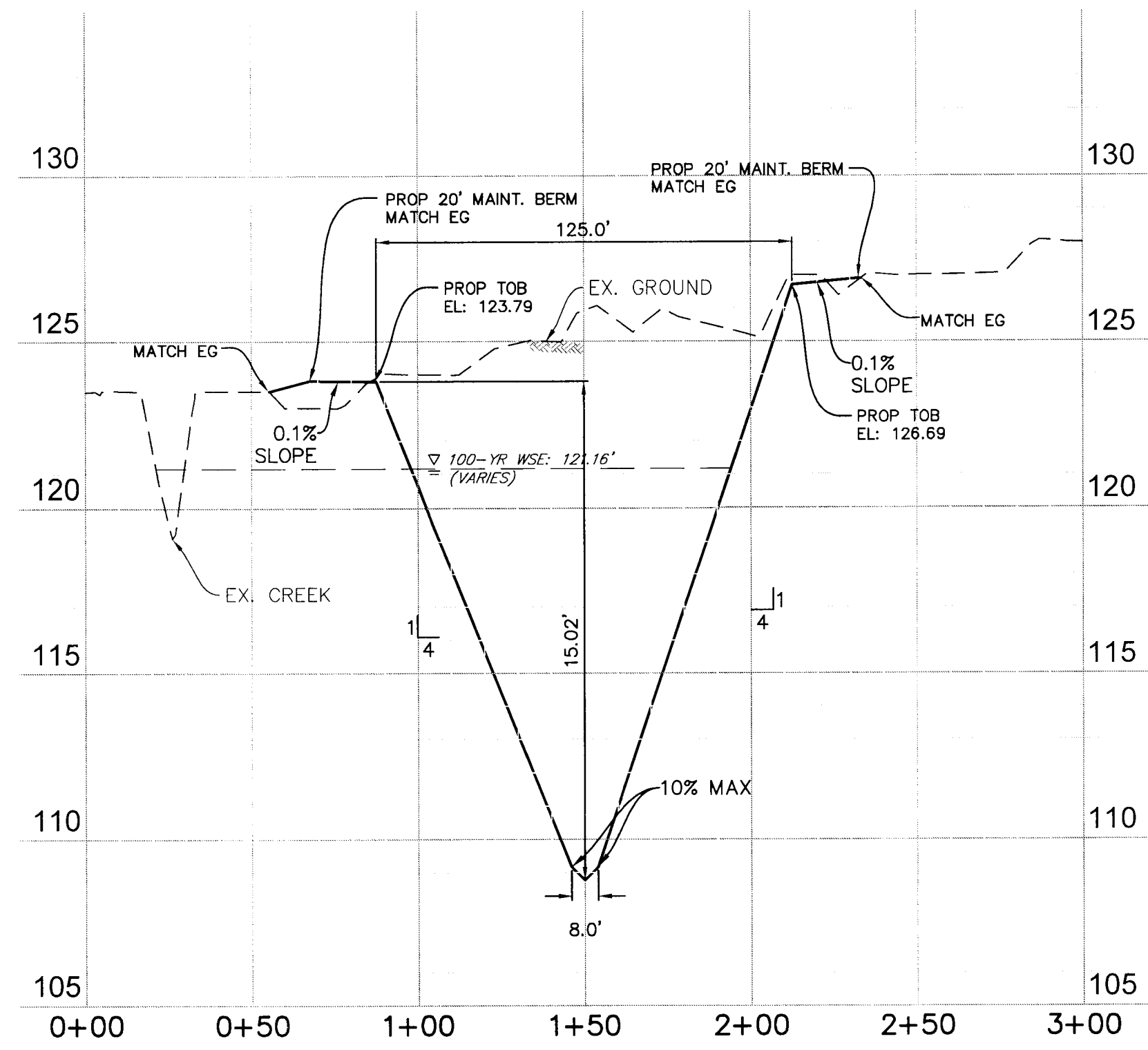
**CHANNEL OVERALL (3 OF 3)**

ENGINEER'S SEAL  
MITCH WATKINS  
2445 TECHNOLOGY FOREST  
BLVD, SUITE 200  
THE WOODLANDS, TX 77381  
(832) 823-2200  
PROFESSIONAL ENGINEER  
126230  
06/29/2021

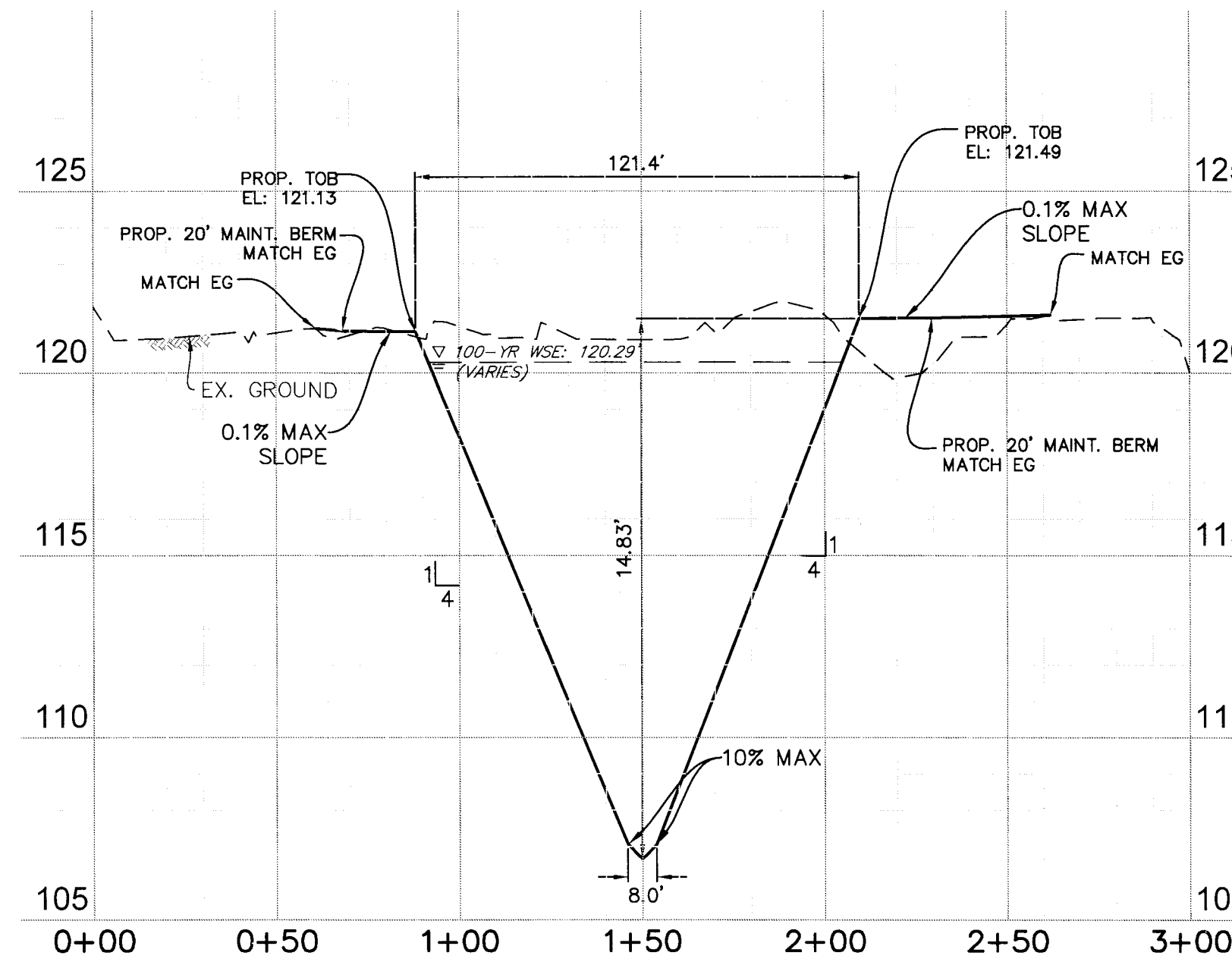
MONTGOMERY COUNTY  
ENGINEERING DEPARTMENT  
APPROVED  
7/7/21  
DATE

ELEVATION LAND SOLUTIONS - TOWNSEND RESERVE PHASE I CHANNEL, DETENTION & MASS GRADING - PROJECT NO. 610.069007.00

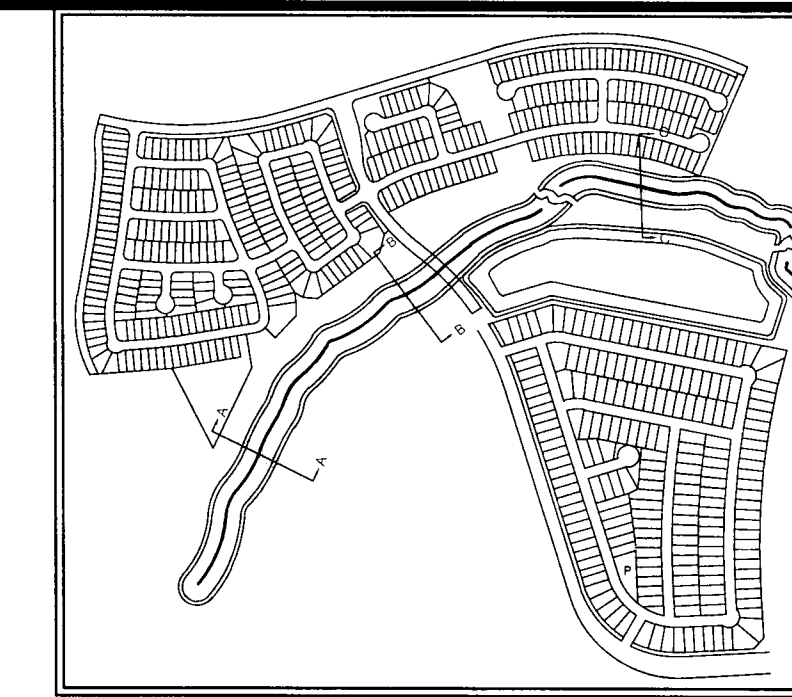
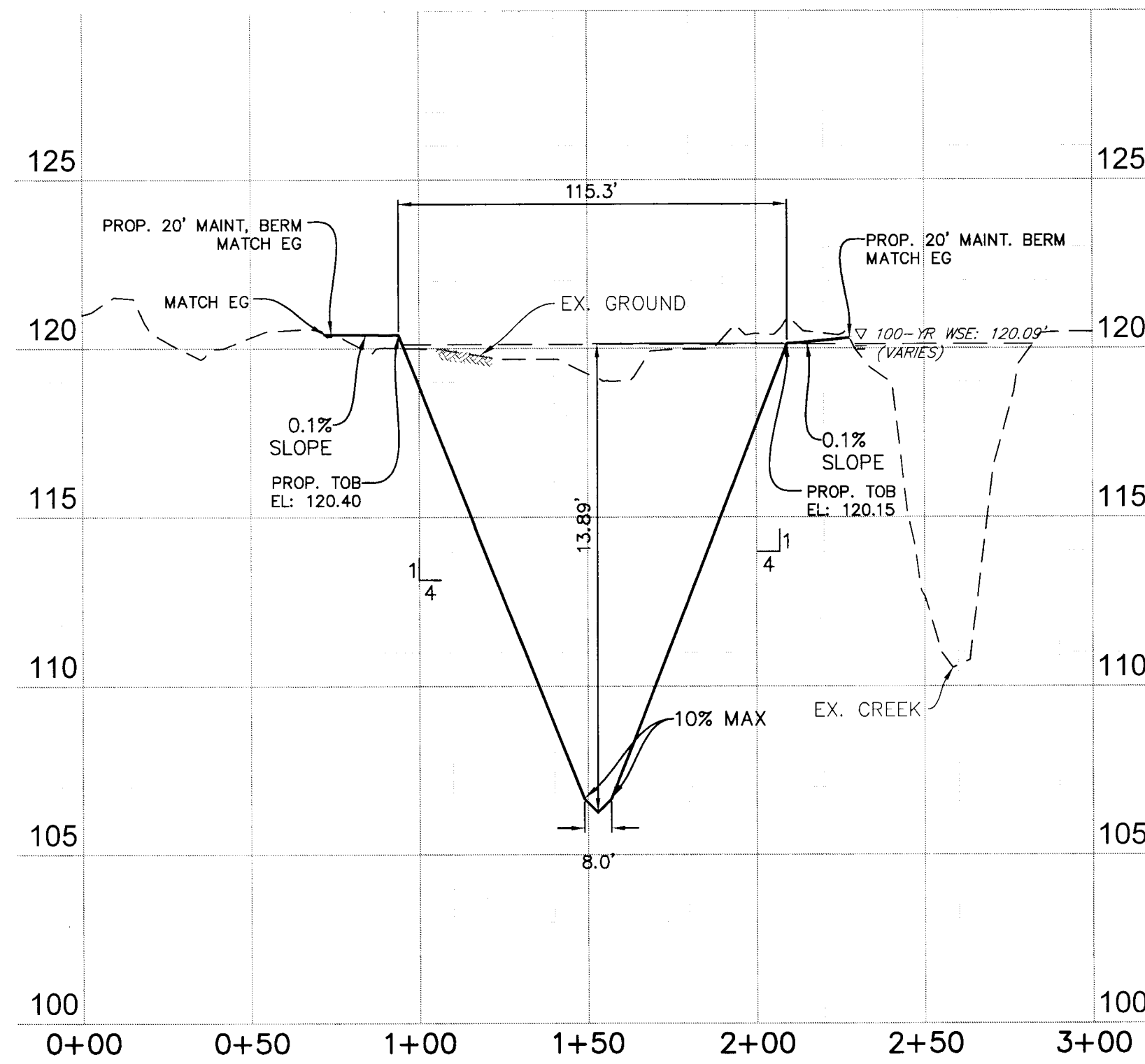
### CROSS SECTION A-A



### CROSS SECTION B-B

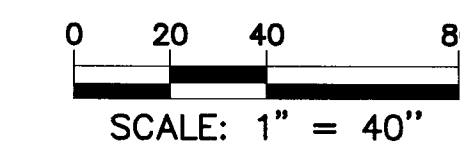


### CROSS SECTION C-C



KEY MAP

**ELEVATION**  
land solutions  
TBPE REGISTRATION NUMBER F-18141  
2445 TECHNOLOGY FOREST BLVD, SUITE 200  
THE WOODLANDS, TX 77381 832-823-2200



**FILL NOTES:**

- EXISTING DRAINAGE SWALES: ALL EXISTING DRAINAGE SWALES SHALL BE FILLED AS SHOWN WITH MATERIAL FROM EXISTING ADJACENT SPOIL BANKS IN MAXIMUM 8" LOOSE LIFTS AND COMPACTED TO 95% PROCTOR DENSITY AS PER AASHTO TEST METHOD T-99.
- EXISTING DRAINAGE SWALES: ALL EXISTING DRAINAGE SWALES UNDER PROPOSED CONCRETE PAVEMENT SHALL BE CLEANED, MUCKED OUT AND SCARIFIED TO A MINIMUM DEPTH OF 6" AND FILLED AS SPECIFIED ABOVE IN FILL NOTE NO. 1 NO SEPARATE PAY.
- ROADWAY EMBANKMENT: STRIP 3" OF VEGETATION FROM AREA TO BE FILLED AND RE-COMPACT SOIL TO 95% PROCTOR DENSITY. PLACE FILL MATERIAL AS SPECIFIED IN FILL NOTE NO. 1

**GENERAL NOTES:**

- ALL ROAD ELEVATIONS SHOWN ARE TOP OF CURB UNLESS OTHERWISE NOTED. PROPOSED TOP OF CURBS ARE BASED ON 6" CURB ELEVATIONS. WHERE 4"X12" CURBS ARE TO BE PLACED, THE ACTUAL TOP OF CURB WILL BE 0.17' LESS THAN THE ELEVATION CALLED OUT ON THE PLANS.
- ALL ROADWAY DIMENSIONS ARE TO EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.

**BENCHMARKS:**

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EASTING: 3,905,916.98 FEET (GRID)  
ELEVATION: 131.94 FEET  
TEMPORARY BENCHMARK B BEING A SET 5/8-INCH IRON ROD WITH CAP SET LOCATED ON THE NORTH RIGHT-OF-WAY OF FM 242 HAVING THE FOLLOWING INFORMATION:  
NORTHING: 10,080,559.09 FEET (GRID)  
EASTING: 3,904,715.89 FEET (GRID)  
ELEVATION: 118.77 FEET

**FLOODPLAIN INFORMATION:**

ACCORDING TO THE MAP NO. 48339C0450G & MAP NO. 48339C0600G OF THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAPS FOR MONTGOMERY COUNTY, TEXAS, DATED AUGUST 18, 2014, THE SUBJECT TRACT IS SITUATED WITHIN: UNSHADED ZONE "X", DEFINED AS AREAS DETERMINED TO BE OUTSIDE THE 500-YEAR FLOOD PLAIN; SHADED ZONE "A", DEFINED AS AREAS OF 100-YEAR FLOOD WITHOUT BASE FLOOD ELEVATIONS.

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| DATE | REVISION | APP. |
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## CHANNEL CROSS SECTIONS

ENGINEER'S SEAL  
MITCH WATKINS  
2445 TECHNOLOGY FOREST  
BLVD. SUITE 200  
THE WOODLANDS, TX 77381  
(832) 823-2200



DATE: 06/29/2021  
TBPE NO. F-18141

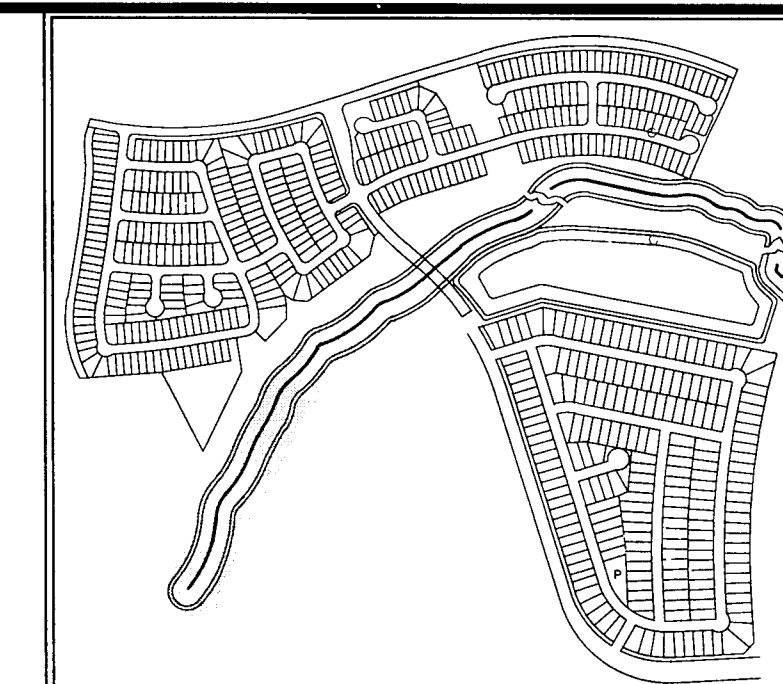
MONTGOMERY COUNTY  
ENGINEERING DEPARTMENT  
APPROVED  
DATE: 7/7/21

ELEVATION LAND SOLUTIONS - TOWNSEND RESERVE PHASE 1 CHANNEL DETENTION & MASS GRADING - PROJECT NO. 610.069007.00

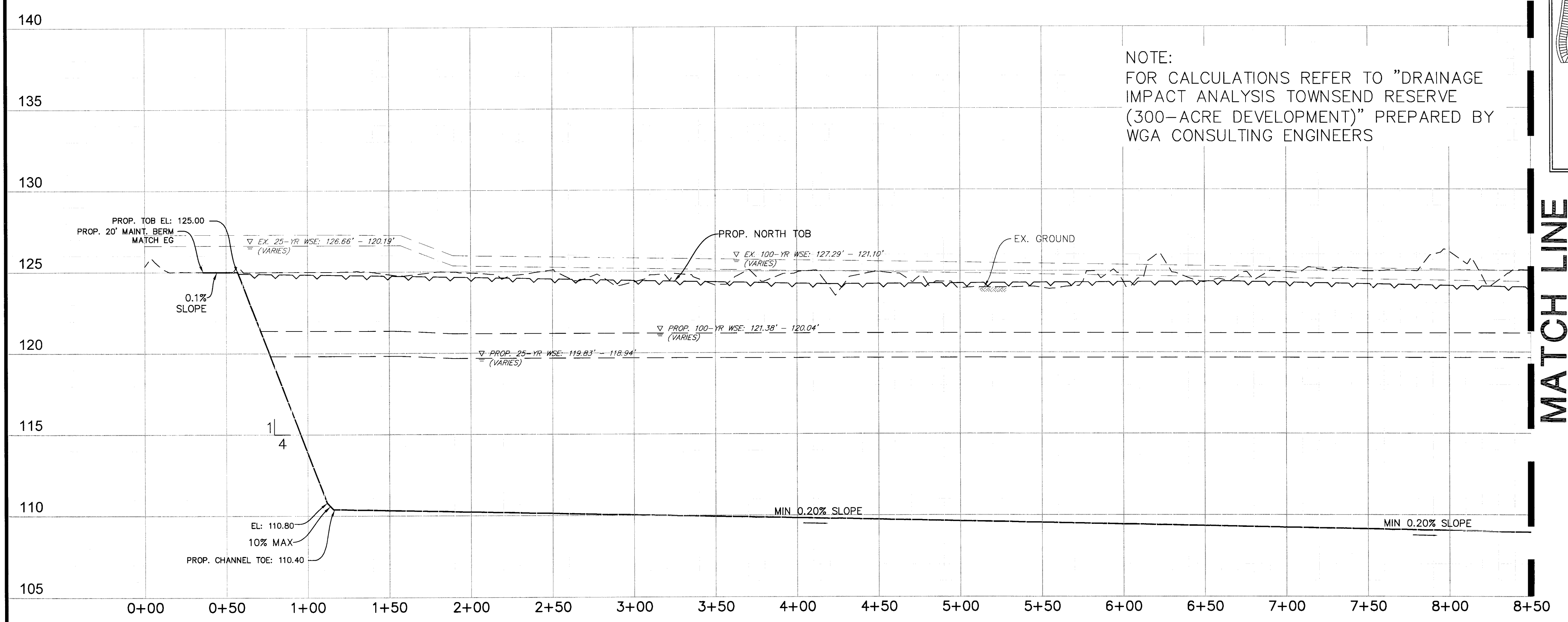
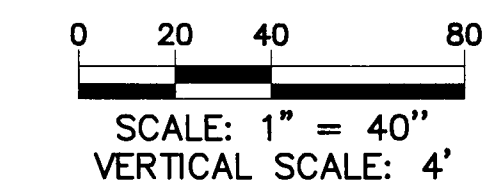


# STA 0+00 TO STA 8+50

NOTE:  
FOR CALCULATIONS REFER TO "DRAINAGE  
IMPACT ANALYSIS TOWNSEND RESERVE  
(300-ACRE DEVELOPMENT)" PREPARED BY  
WGA CONSULTING ENGINEERS

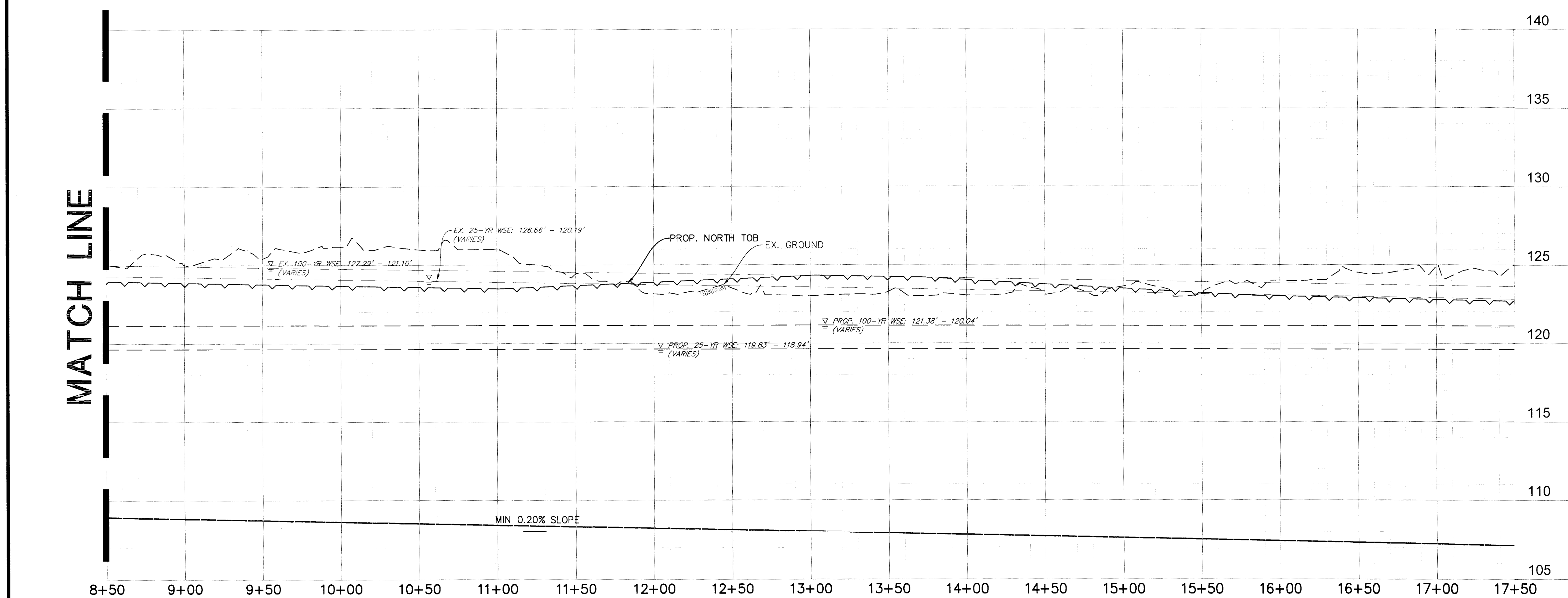


**ELEVATION**  
land solutions  
TBPE REGISTRATION NUMBER F-18141  
2445 TECHNOLOGY FOREST BLVD, SUITE 200  
THE WOODLANDS, TX 77381 832-823-2200



MATCH LINE

# STA 8+50 TO STA 17+50



MATCH LINE

**FILL NOTES:**

- EXISTING DRAINAGE SWALES: ALL EXISTING DRAINAGE SWALES SHALL BE FILLED AS SHOWN WITH MATERIAL FROM EXISTING ADJACENT SPOIL BANKS IN MAXIMUM 8" LOOSE LIFTS AND COMPACTED TO 95% PROCTOR DENSITY AS PER AASHTO TEST METHOD T-99.
- EXISTING DRAINAGE SWALES: ALL EXISTING DRAINAGE SWALES UNDER PROPOSED CONCRETE PAVEMENT SHALL BE CLEANED, MUCKED OUT AND SCARIFIED TO A MINIMUM DEPTH OF 6" AND FILLED AS SPECIFIED ABOVE IN FILL NOTE NO. 1 NO SEPARATE PAY.
- ROADWAY EMBANKMENT: STRIP 3" OF VEGETATION FROM AREA TO BE FILLED AND RE-COMPACT SOIL TO 95% PROCTOR DENSITY. PLACE FILL MATERIAL AS SPECIFIED IN FILL NOTE NO. 1

**GENERAL NOTES:**

- ALL ROAD ELEVATIONS SHOWN ARE TOP OF CURB UNLESS OTHERWISE NOTED. PROPOSED TOP OF CURBS ARE BASED ON 6" CURB ELEVATIONS. WHERE 4"X12" CURBS ARE TO BE PLACED, THE ACTUAL TOP OF CURB WILL BE 0.17" LESS THAN THE ELEVATION CALLED OUT ON THE PLANS.
- ALL ROADWAY DIMENSIONS ARE TO EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.

**BENCHMARKS:**

SOURCE BENCHMARK:  
ELEVATIONS SHOWN HEREON ARE BASED ON NATIONAL GEODETIC SURVEY MONUMENT DESIGNATION CONPORT, PID No. BL2014 HAVING A PUBLISHED ELEVATION OF 234.56 FEET, NAVD 1988. TEMPORARY BENCHMARK A BEING A PK NAIL SET IN ASPHALT LOCATED ON THE NORTH RIGHT-OF-WAY OF FM 242 HAVING THE FOLLOWING INFORMATION:  
NORTHING: 10,080,298.21 FEET (GRID)  
EASTING: 3,905,916.98 FEET (GRID)  
ELEVATION: 131.84 FEET  
TEMPORARY BENCHMARK B BEING A SET 5/8-INCH IRON ROD WITH CAP SET LOCATED ON THE NORTH RIGHT-OF-WAY OF FM 242 HAVING THE FOLLOWING INFORMATION:  
NORTHING: 10,080,589.09 FEET (GRID)  
EASTING: 3,904,715.89 FEET (GRID)  
ELEVATION: 118.77 FEET

**FLOODPLAIN INFORMATION:**  
ACCORDING TO THE MAP NO. 4833900450G & MAP NO. 4833900600G OF THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAPS FOR MONTGOMERY COUNTY, TEXAS, DATED AUGUST 18, 2014, THE SUBJECT TRACT IS SITUATED WITHIN: UNSHADED ZONE "X"; DEFINED AS AREAS DETERMINED TO BE OUTSIDE THE 500-YEAR FLOOD PLAIN; SHADED ZONE "A"; DEFINED AS AREAS OF 100-YEAR FLOOD WITHOUT BASE FLOOD ELEVATIONS.

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| DATE | REVISION | APP. |
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## CHANNEL PROFILES (1 OF 3)

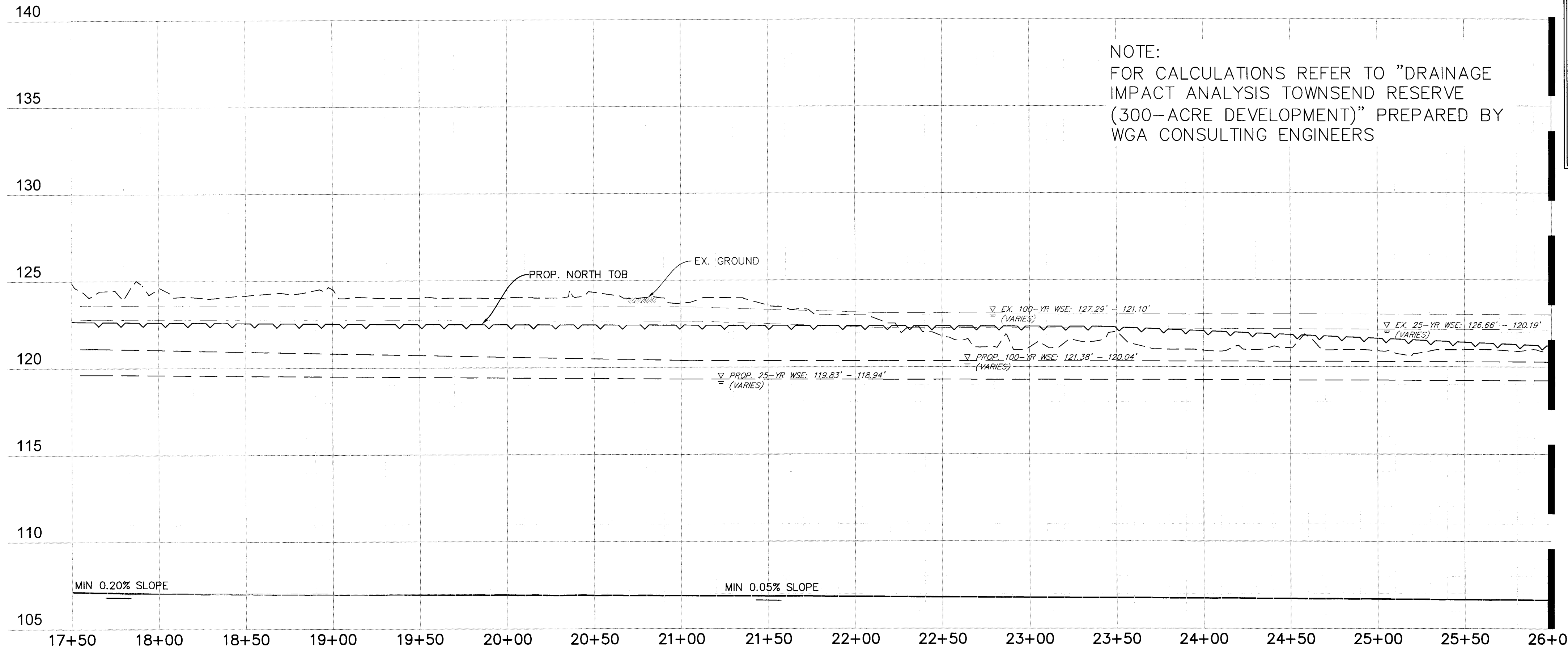
ENGINEER'S SEAL  
MITCH WATKINS  
2445 TECHNOLOGY FOREST  
BLVD, SUITE 200  
THE WOODLANDS, TX 77381  
(832) 823-2200  
TBPE NO. F-18141  
06/29/2021



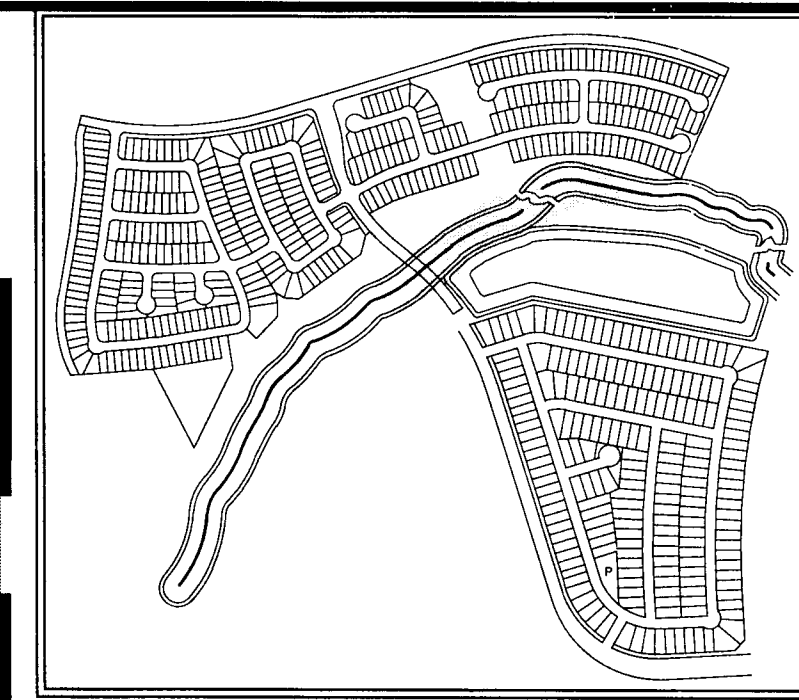
MONTGOMERY COUNTY  
ENGINEERING DEPARTMENT  
APPROVED  
7/7/21  
DATE

ELEVATION LAND SOLUTIONS - TOWNSEND RESERVE PHASE 1 CHANNEL DETENTION & MASS GRADING - PROJECT NO. 610.069007.00

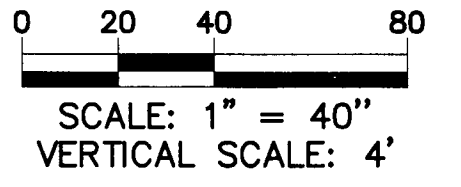
# STA 17+50 TO STA 26+00



NOTE:  
FOR CALCULATIONS REFER TO "DRAINAGE  
IMPACT ANALYSIS TOWNSEND RESERVE  
(300-ACRE DEVELOPMENT)" PREPARED BY  
WGA CONSULTING ENGINEERS



**ELEVATION**  
land solutions  
TBPE REGISTRATION NUMBER F-18141  
2445 TECHNOLOGY FOREST BLVD, SUITE 200  
THE WOODLANDS, TX 77381 832-823-2200



MATCH LINE

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EASTING: 3,905,916.98 FEET (GRID)  
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ELEVATION: 118.77 FEET

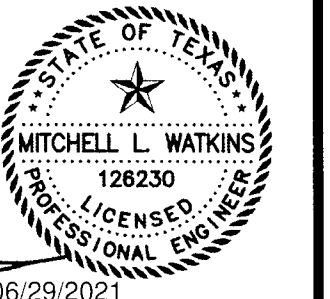
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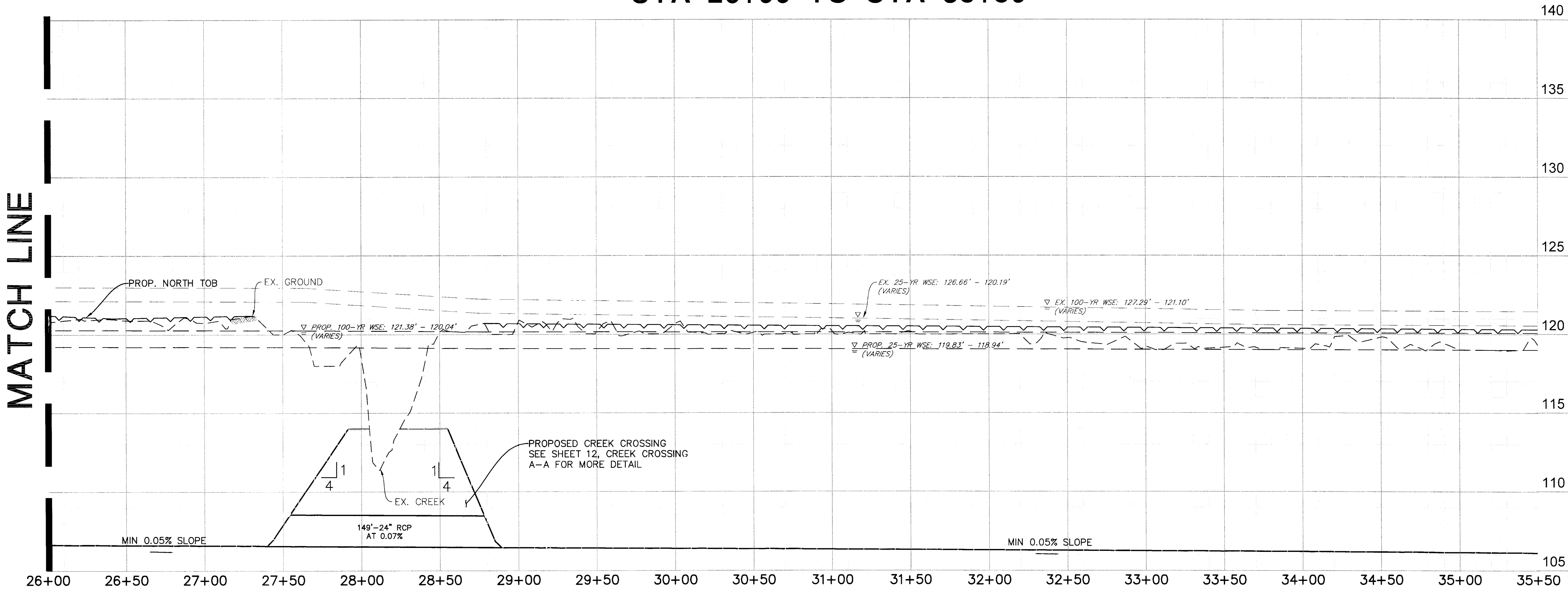
## CHANNEL PROFILES (2 OF 3)

ENGINEER'S SEAL  
**MITCH WATKINS**  
2445 TECHNOLOGY FOREST  
BLVD, SUITE 200  
THE WOODLANDS, TX 77381  
(832) 823-2200  
128230  
06/29/2021  
TBPE NO. F-18141



MONTGOMERY COUNTY  
ENGINEERING DEPARTMENT  
APPROVED  
7/7/21  
DATE

# STA 26+00 TO STA 35+50

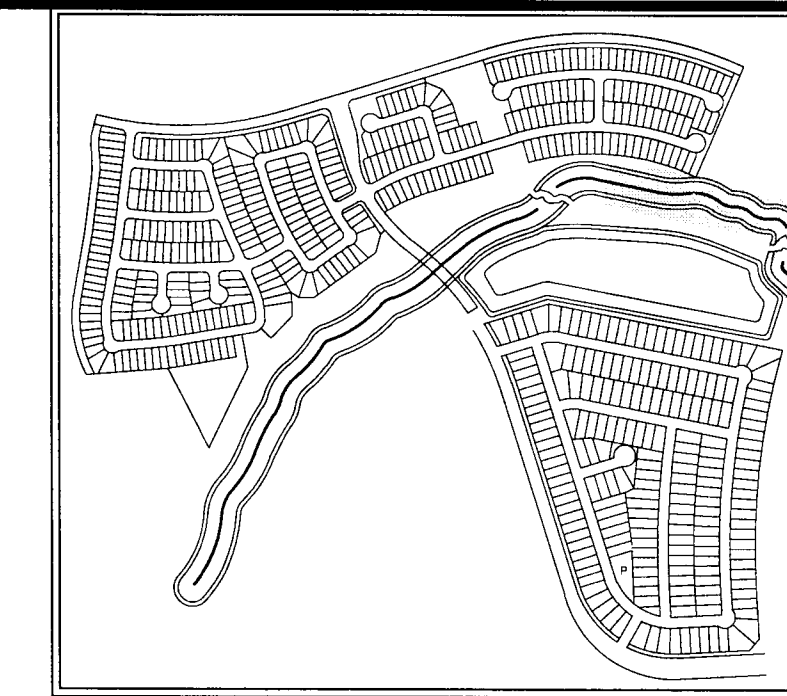
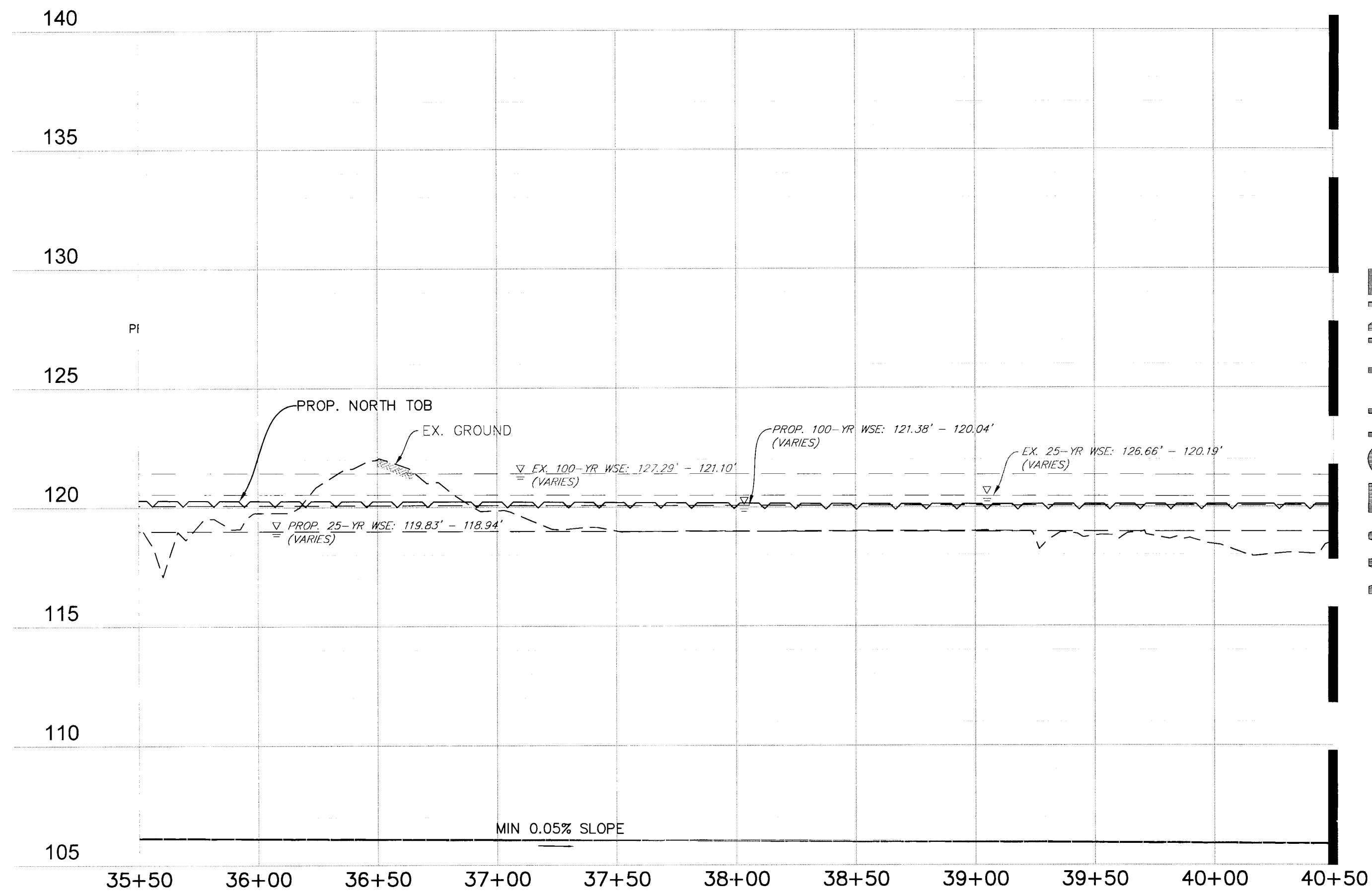


MATCH LINE

ELEVATION LAND SOLUTIONS - TOWNSEND RESERVE PHASE 1 CHANNEL DETENTION & MASS GRADING - PROJECT NO. 610.069007.00

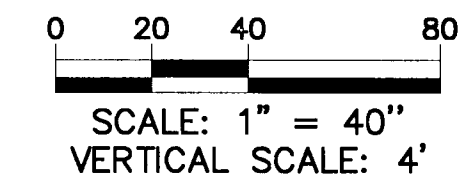


STA 35+50 TO STA 40+50



KEY MAP

**ELEVATION**  
land solutions  
TBPE REGISTRATION NUMBER F-18141  
2445 TECHNOLOGY FOREST BLVD, SUITE 200  
THE WOODLANDS, TX 77381 832-823-2200



NOTE:  
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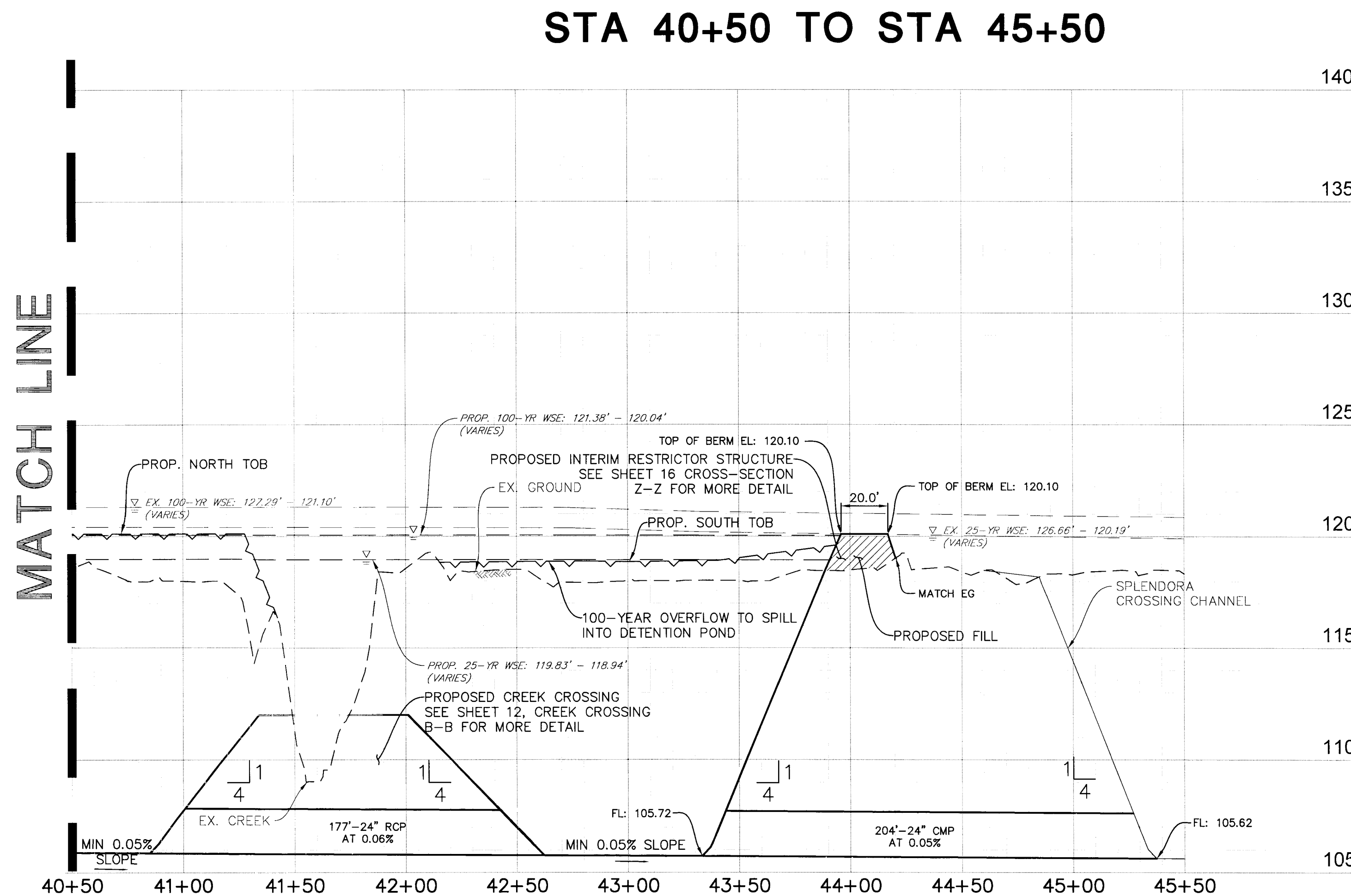
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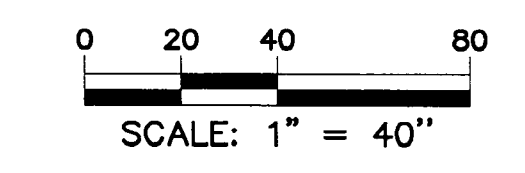
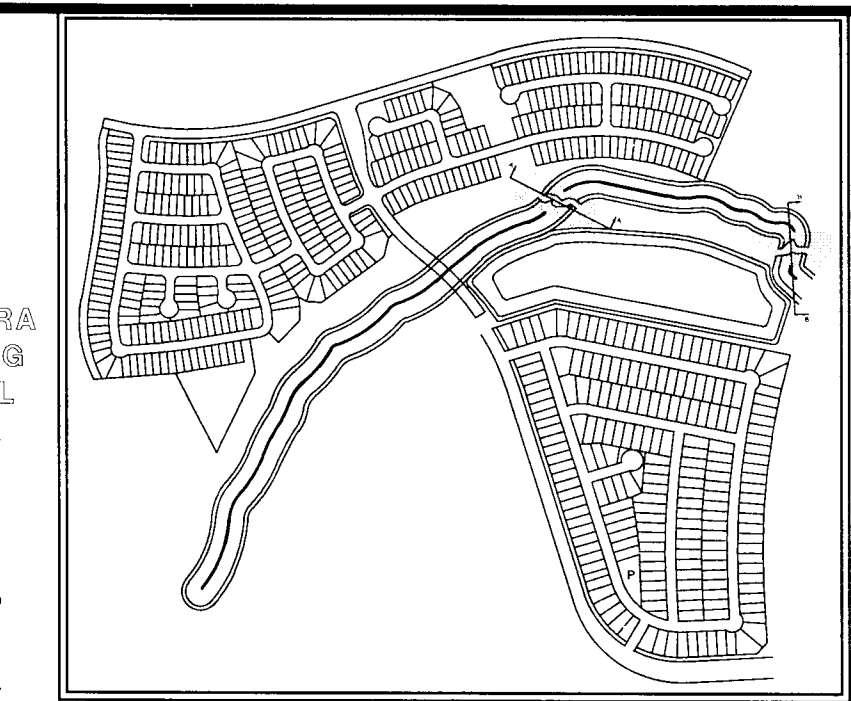
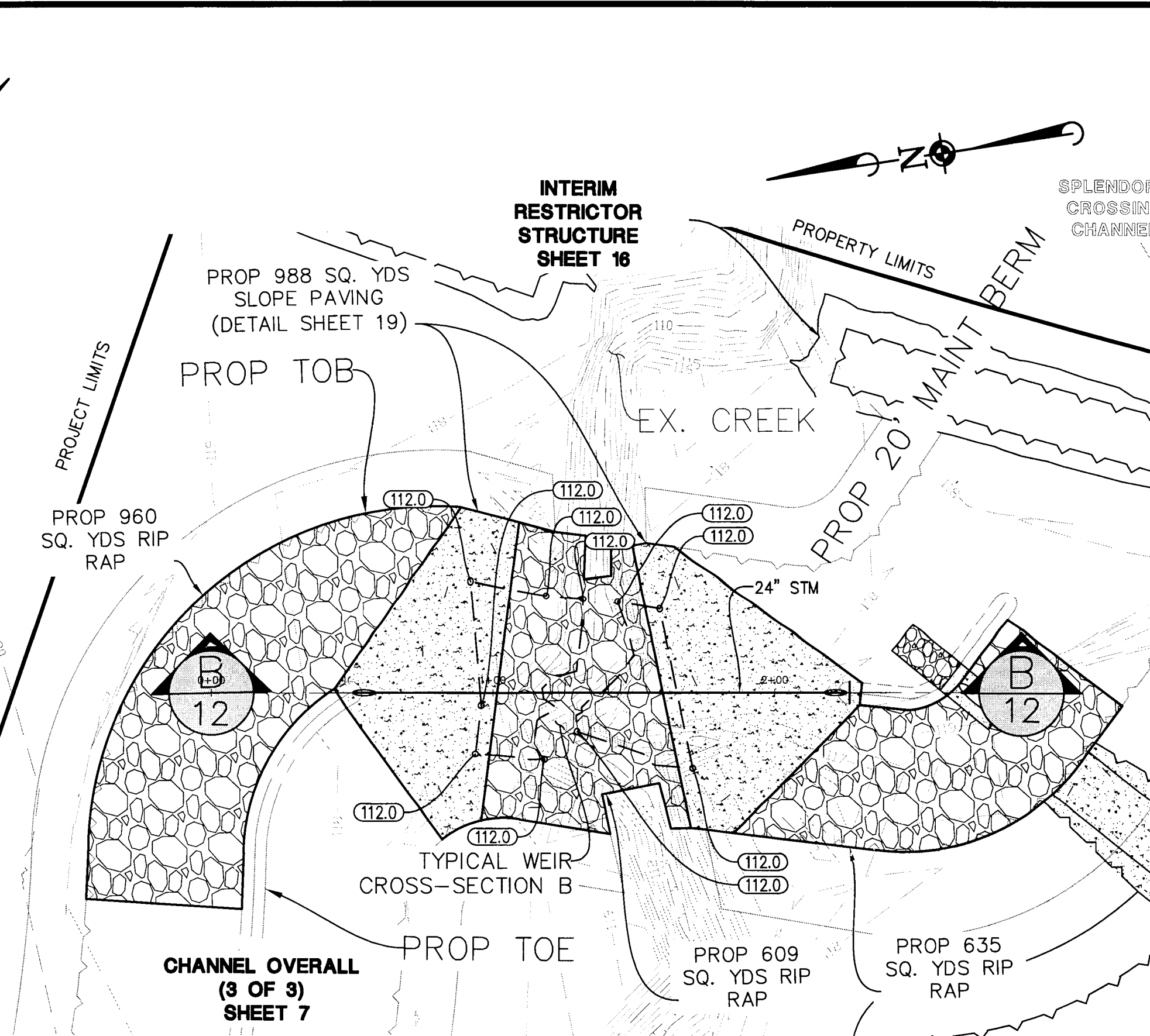
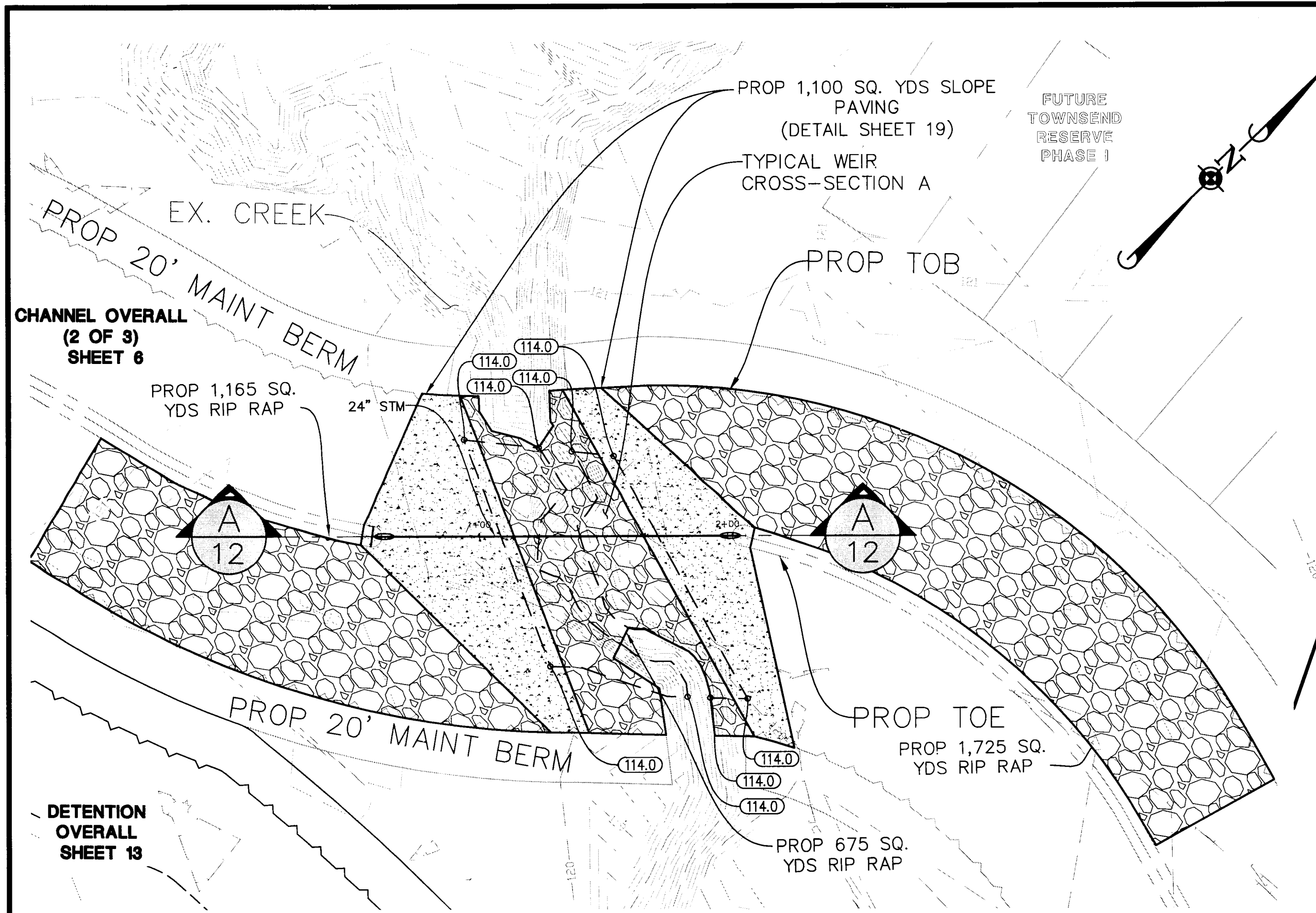
CHANNEL PROFILES (3 OF 3)



ENGINEER'S SEAL  
MITCH WATKINS  
2445 TECHNOLOGY FOREST  
BLVD, SUITE 200  
THE WOODLANDS, TX 77381  
(832) 823-2200  
128230  
06/29/2021

MONTGOMERY COUNTY  
ENGINEERING DEPARTMENT  
APPROVED  
DATE 7/7/21

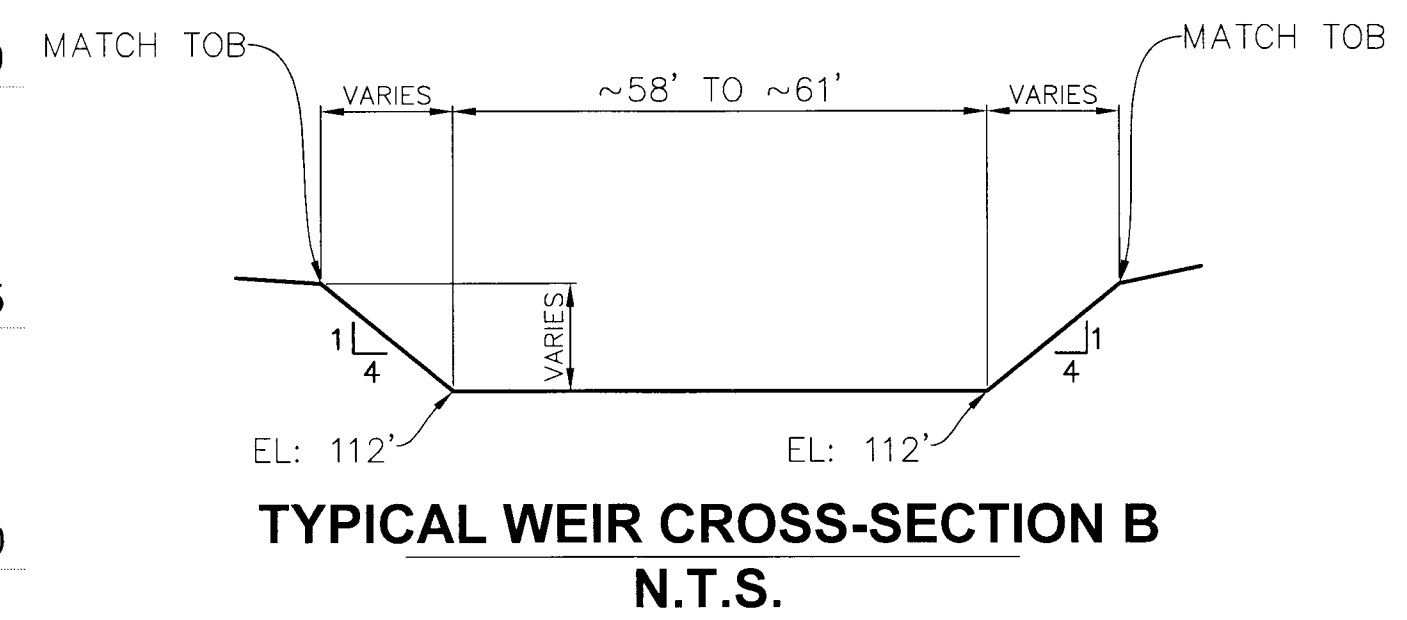
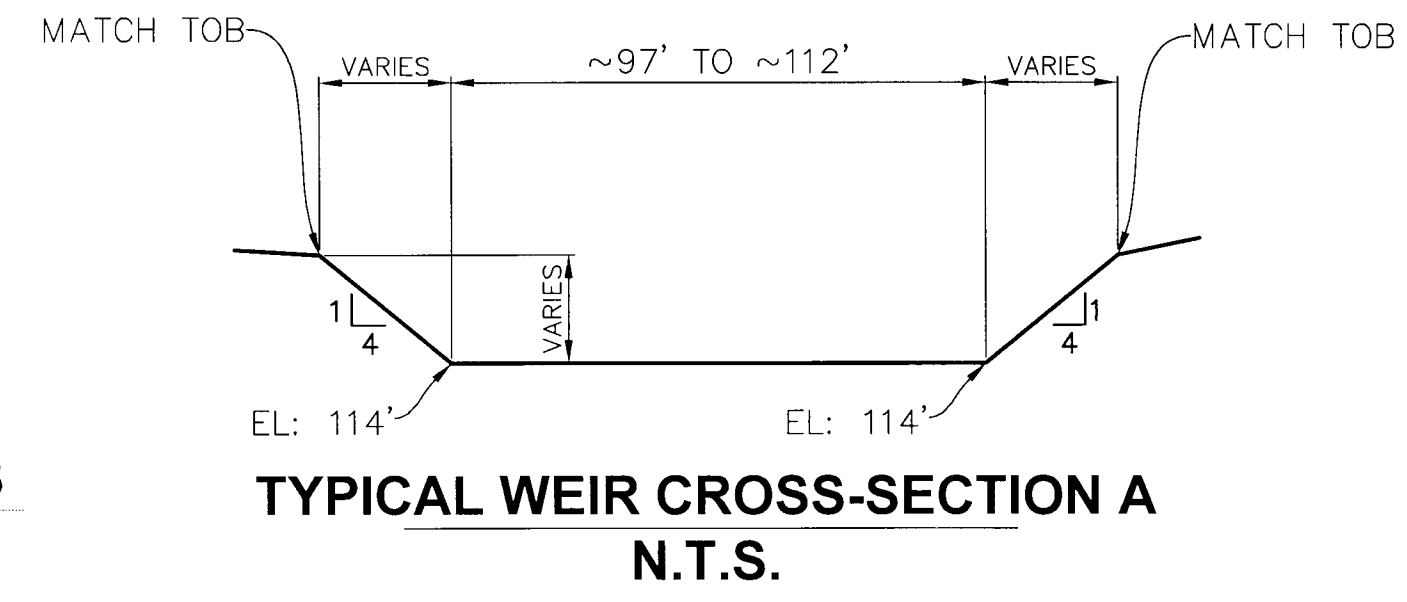
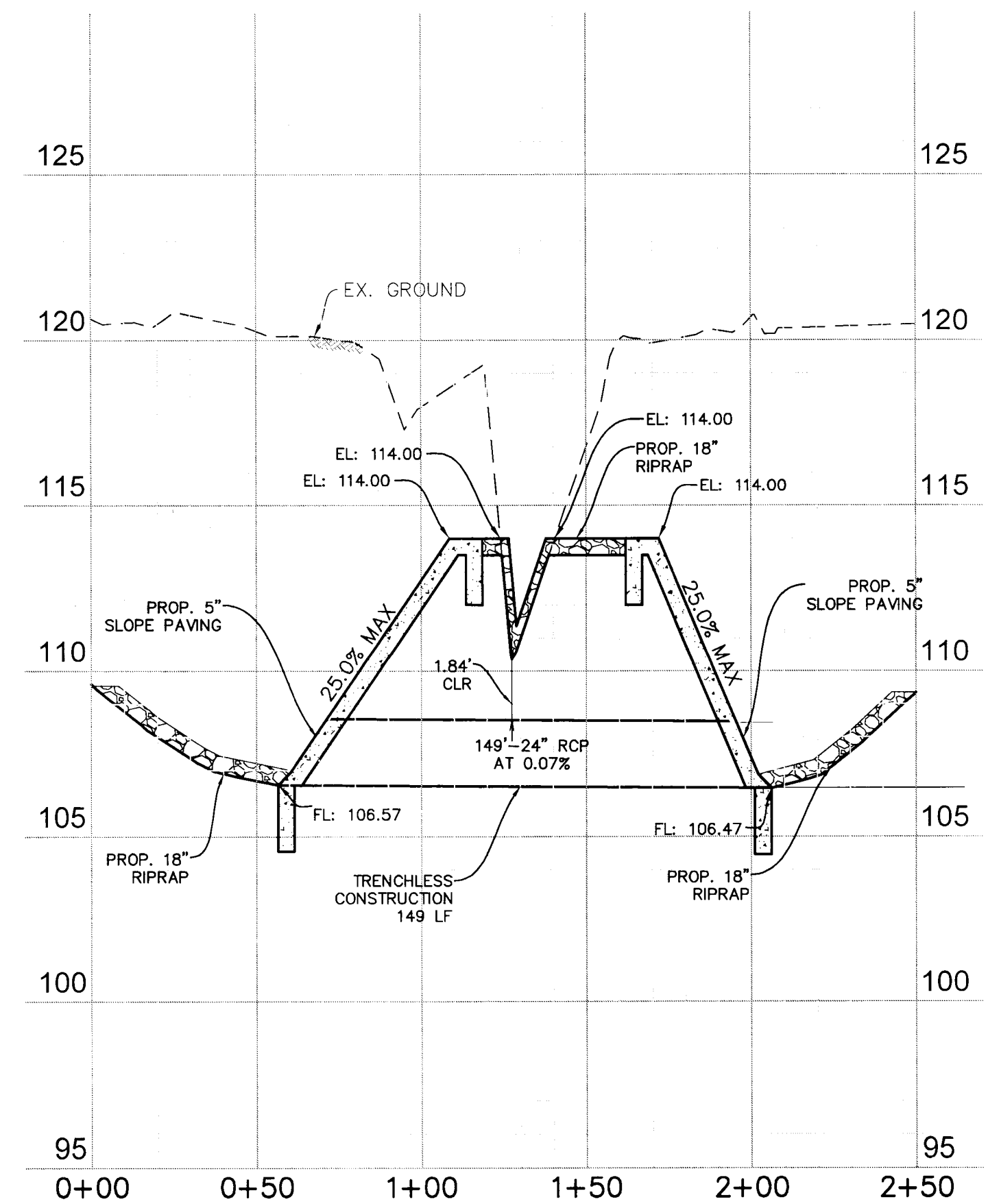
ELEVATION LAND SOLUTIONS - TOWNSEND RESERVE PHASE 1 CHANNEL, DETENTION & MASS GRADING - PROJECT NO. 610.069007.00



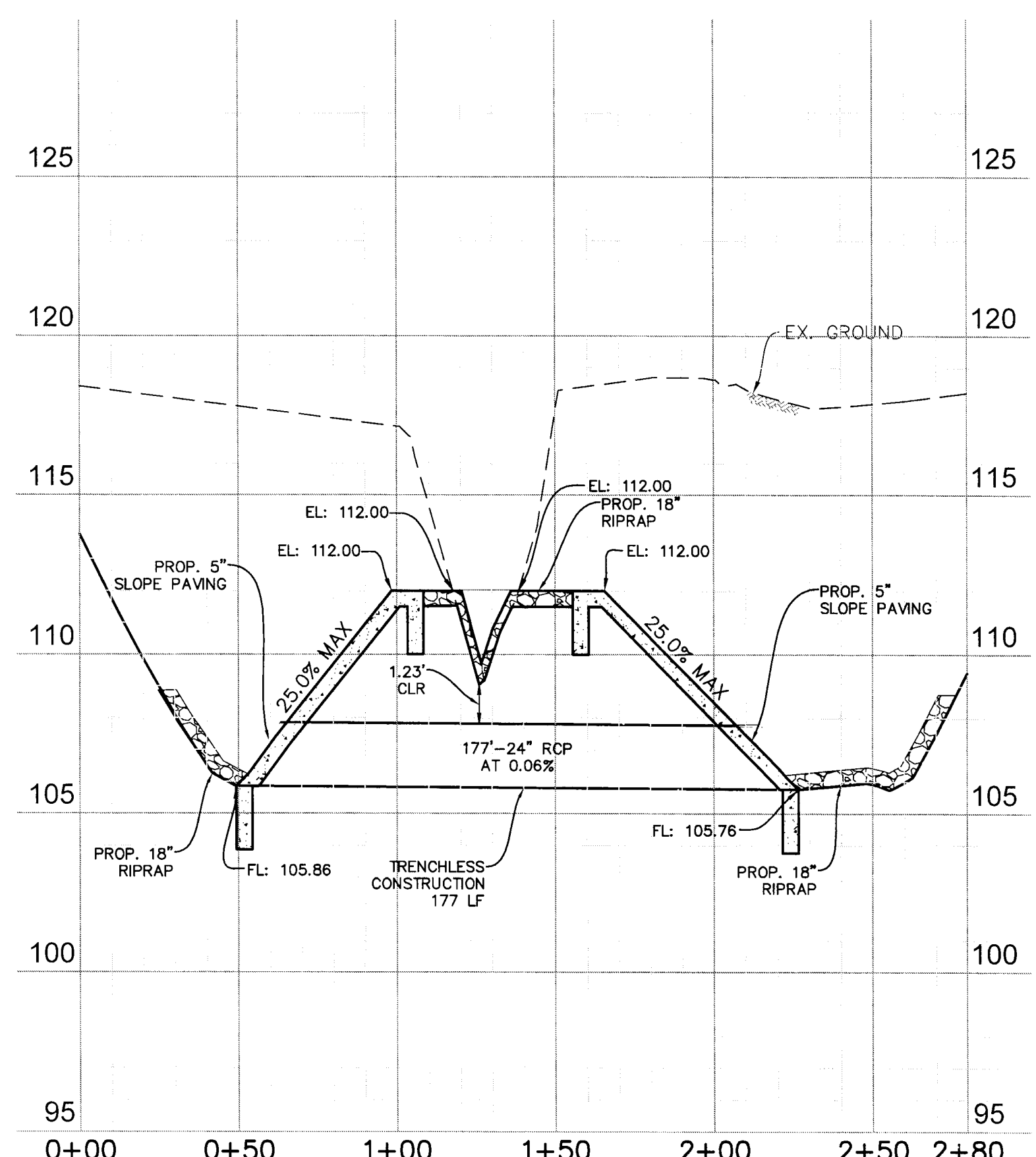
**ELEVATION**  
land solutions  
TBPE REGISTRATION NUMBER F-18141  
2445 TECHNOLOGY FOREST BLVD, SUITE 200  
THE WOODLANDS, TX 77381 832-823-2200

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**CREEK CROSSING A-A**



**CREEK CROSSING B-B**



| DATE | REVISION | APP. |
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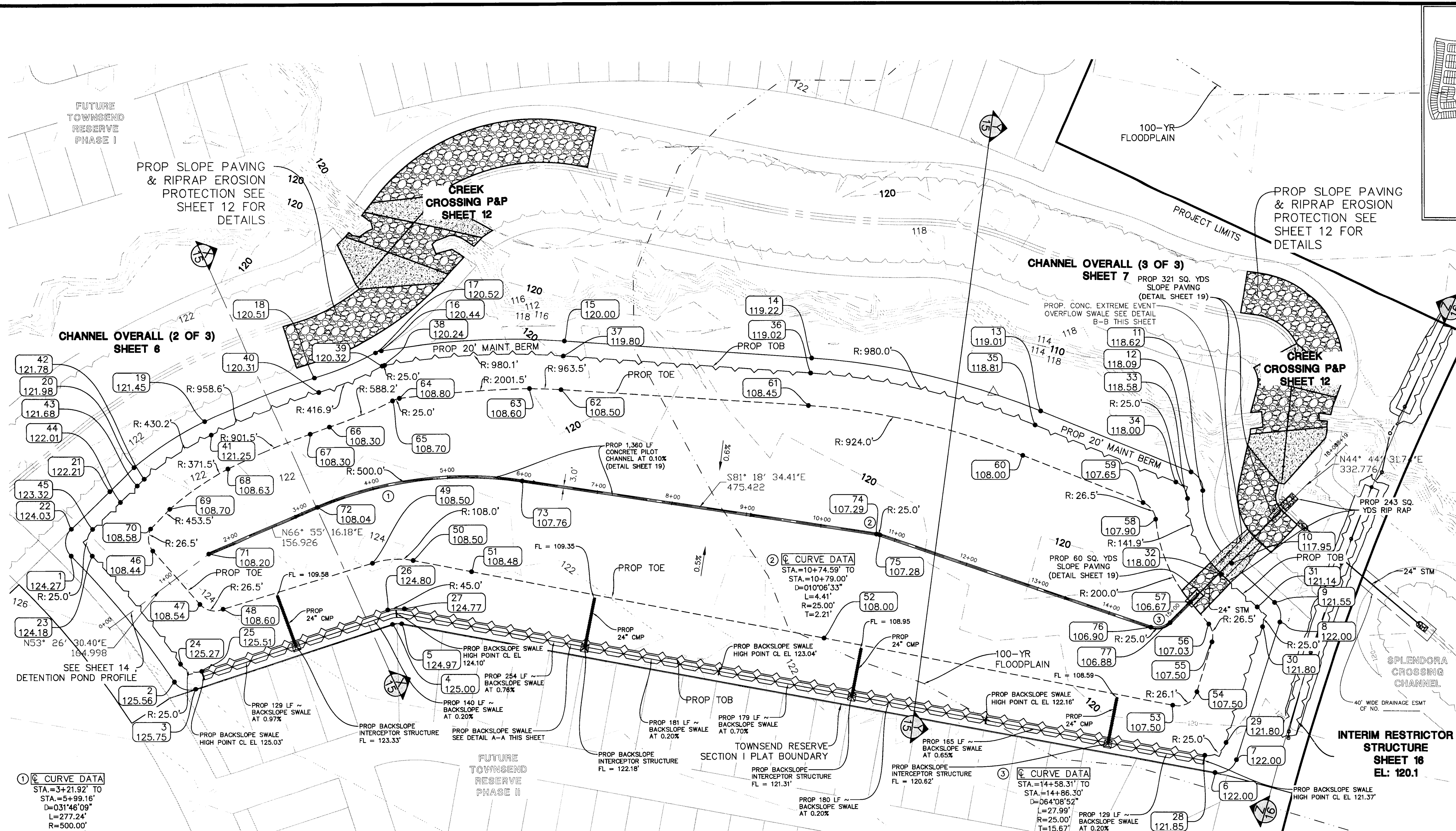
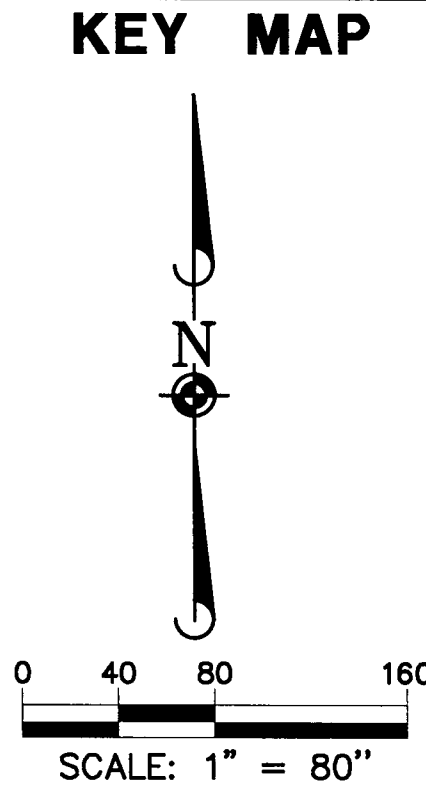
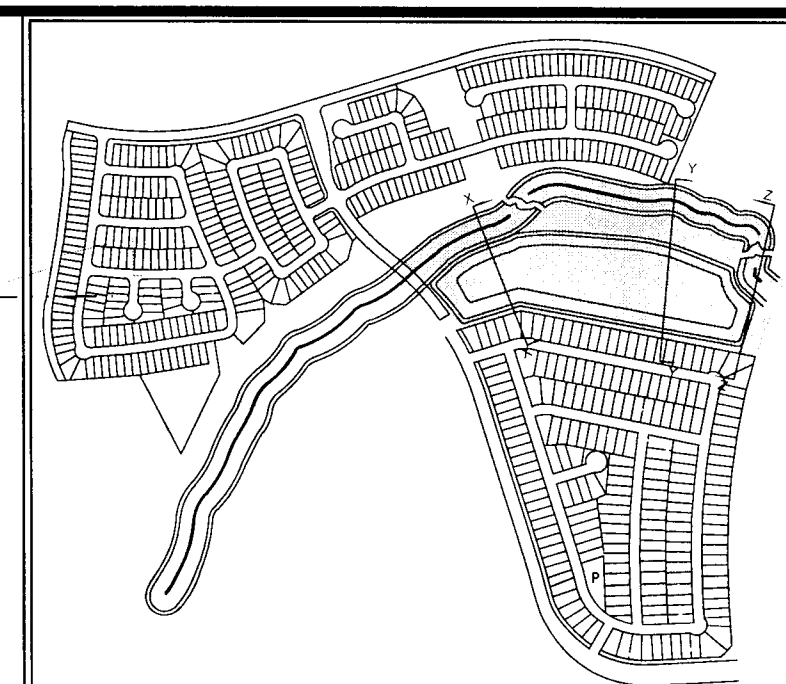
**CREEK CROSSING P&P**

ENGINEER'S SEAL  
MITCH WATKINS  
2445 TECHNOLOGY FOREST BLVD, SUITE 200  
THE WOODLANDS, TX 77381  
(832) 823-2200  
128230  
PROFESSIONAL ENGINEER  
TBPE NO. F-18141  
06/29/2021

MONTGOMERY COUNTY  
ENGINEERING DEPARTMENT  
APPROVED  
DATE 7/7/21

ELEVATION LAND SOLUTIONS - TOWNSEND RESERVE PHASE 1 CHANNEL DETENTION & MASS GRADING - PROJECT NO. 610.069007.00





**BENCHMARKS:**  
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**POND MAINTENANCE BERM**

| NO.   | ELEV   | NORTHING (Y) | EASTING (X) |
|-------|--------|--------------|-------------|
| 1     | 124.27 | 10092541.78  | 3912395.93  |
| 2     | 125.56 | 10092375.15  | 3912532.56  |
| 3     | 125.75 | 10092365.62  | 3912560.95  |
| 4     | 125.00 | 10092450.44  | 3912822.28  |
| 5     | 124.97 | 10092451.25  | 3912834.51  |
| 6     | 122.00 | 10092253.32  | 3913912.86  |
| 7     | 122.00 | 10092270.29  | 3913941.18  |
| 8     | 122.00 | 10092451.86  | 3913999.32  |
| 9     | 121.55 | 10092477.96  | 3913992.36  |
| 10    | 117.95 | 10092529.78  | 3913935.56  |
| EG 11 | 118.62 | 10092626.02  | 3913897.66  |
| EG 12 | 118.09 | 10092650.70  | 3913882.27  |
| EG 13 | 119.01 | 10092731.55  | 3913682.67  |
| EG 14 | 119.22 | 10092802.09  | 3913379.33  |
| EG 15 | 120.00 | 10092825.79  | 3913051.35  |
| EG 16 | 120.44 | 10092813.72  | 3912808.63  |
| EG 17 | 120.52 | 10092811.01  | 3912800.90  |
| EG 18 | 120.51 | 10092777.54  | 3912719.63  |
| EG 19 | 121.45 | 10092719.70  | 3912573.84  |
| EG 20 | 121.98 | 10092658.63  | 3912479.89  |
| EG 21 | 122.21 | 10092627.31  | 3912447.75  |
| EG 22 | 124.03 | 10092577.21  | 3912396.31  |

**POND TOB**

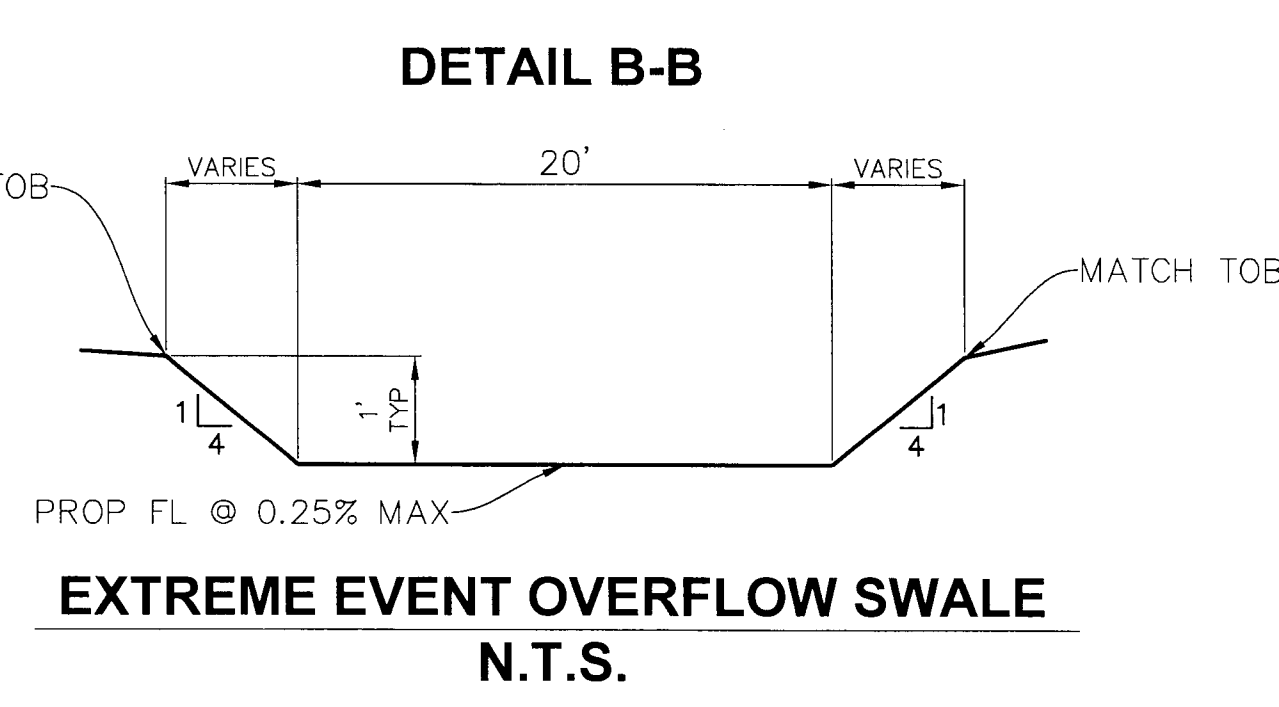
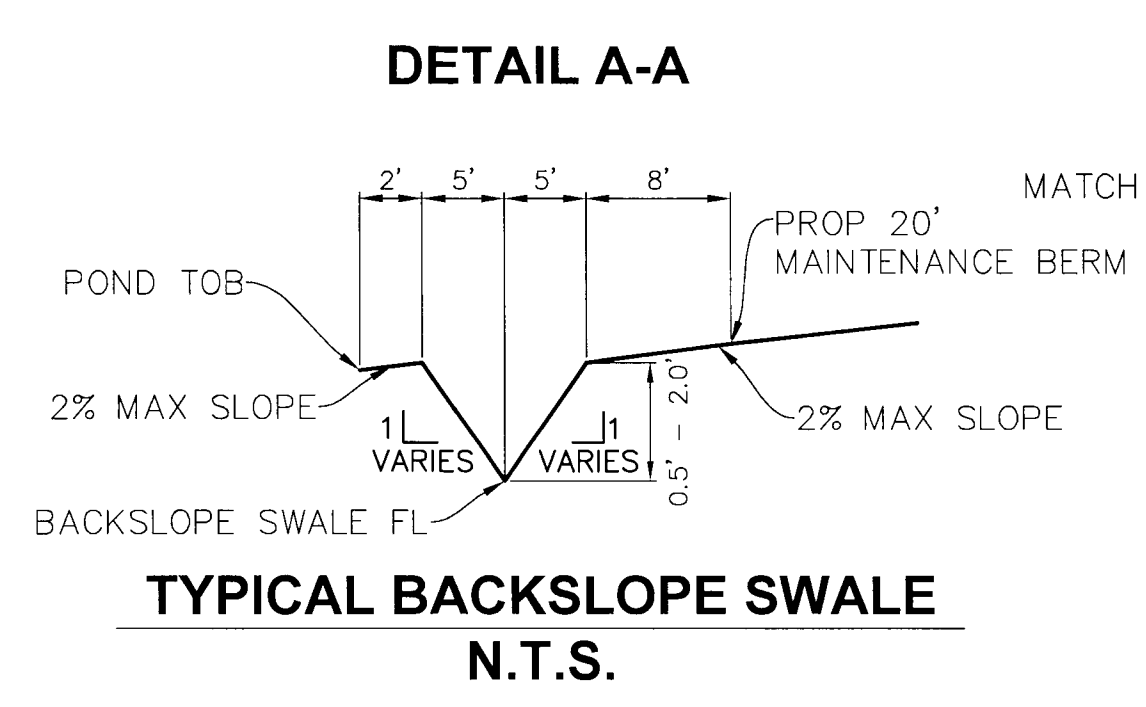
| NO. | ELEV   | NORTHING (Y) | EASTING (X) |
|-----|--------|--------------|-------------|
| 23  | 124.18 | 10092541.64  | 3912423.96  |
| 24  | 125.27 | 10092398.76  | 3912540.64  |
| 25  | 125.51 | 10092389.23  | 3912568.90  |
| 26  | 124.80 | 10092469.46  | 3912816.10  |
| 27  | 124.77 | 10092470.92  | 3912838.12  |
| 28  | 121.85 | 10092276.17  | 3913899.17  |
| 29  | 121.80 | 10092293.14  | 3913927.49  |
| 30  | 121.80 | 10092445.74  | 3913976.36  |
| 31  | 121.14 | 10092471.83  | 3913969.40  |
| 32  | 118.00 | 10092515.12  | 3913921.95  |
| 33  | 118.58 | 10092615.48  | 3913877.44  |
| 34  | 118.00 | 10092637.35  | 3913861.97  |
| 35  | 118.81 | 10092713.01  | 3913675.16  |
| 36  | 119.02 | 10092782.14  | 3913377.88  |
| 37  | 119.80 | 10092805.84  | 3913049.91  |
| 38  | 120.24 | 10092794.16  | 3912812.90  |
| 39  | 120.32 | 10092793.08  | 3912809.80  |
| 40  | 120.31 | 10092758.36  | 3912725.33  |
| 41  | 121.25 | 10092701.73  | 3912582.62  |
| 42  | 121.78 | 10092643.80  | 3912493.33  |
| 43  | 121.68 | 10092634.79  | 3912484.09  |
| 44  | 122.01 | 10092612.99  | 3912461.71  |
| 45  | 123.32 | 10092576.83  | 3912424.58  |

**POND TOE**

| NO. | ELEV   | NORTHING (Y) | EASTING (X) |
|-----|--------|--------------|-------------|
| 46  | 108.44 | 10092548.34  | 3912504.38  |
| 47  | 108.54 | 10092477.53  | 3912566.80  |
| 48  | 108.60 | 10092471.13  | 3912597.52  |
| 49  | 108.50 | 10092531.34  | 3912796.01  |
| 50  | 108.50 | 10092534.94  | 3912849.86  |
| 51  | 108.48 | 10092519.70  | 3912927.48  |
| 52  | 108.00 | 10092430.86  | 3913394.59  |
| 53  | 107.50 | 10092342.57  | 3913856.93  |
| 54  | 107.50 | 10092360.17  | 3913889.12  |
| 55  | 107.50 | 10092425.48  | 3913909.11  |
| 56  | 107.03 | 10092449.18  | 3913904.93  |
| 57  | 106.67 | 10092478.36  | 3913881.05  |
| 58  | 107.90 | 10092587.95  | 3913834.91  |
| 59  | 107.65 | 10092609.98  | 3913818.22  |
| 60  | 108.00 | 10092672.55  | 3913658.77  |
| 61  | 108.45 | 10092738.96  | 3913374.76  |
| 62  | 108.50 | 10092760.85  | 3913046.65  |
| 63  | 108.60 | 10092762.51  | 3913004.59  |
| 64  | 108.80 | 10092750.30  | 3912832.27  |
| 65  | 108.70 | 10092747.18  | 3912823.31  |
| 66  | 108.30 | 10092711.87  | 3912739.36  |
| 67  | 108.30 | 10092702.49  | 3912713.89  |
| 68  | 108.63 | 10092656.55  | 3912604.50  |
| 69  | 108.70 | 10092603.60  | 3912527.03  |
| 70  | 108.58 | 10092577.29  | 3912501.61  |

**POND CENTER OF DITCH**

| NO. | ELEV   | NORTHING (Y) | EASTING (X) |
|-----|--------|--------------|-------------|
| 71  | 108.20 | 10092544.13  | 3912578.82  |
| 72  | 108.04 | 10092605.65  | 3912723.19  |
| 73  | 107.76 | 10092639.92  | 3912994.73  |
| 74  | 107.29 | 10092568.09  | 3913464.70  |
| 75  | 107.28 | 10092567.04  | 3913468.98  |
| 76  | 106.90 | 10092444.81  | 3913828.05  |
| 77  | 106.88 | 10092450.89  | 3913853.88  |



| DETENTION |               |
|-----------|---------------|
| AREA      | DET. PROVIDED |
| 81.7 AC.  | 96.06 AC-FT   |

REFER TO "DRAINAGE IMPACT ANALYSIS TOWNSEND RESERVE (300-ACRE DEVELOPMENT)" PREPARED BY WGA CONSULTING ENGINEERS

| DATE | REVISION | APP. |
|------|----------|------|
|      |          |      |

**DETENTION OVERALL**

ENGINEER'S SEAL  
MITCH WATKINS  
2445 TECHNOLOGY FOREST  
BLVD, SUITE 200  
THE WOODLANDS, TX 77381  
(832) 823-2200

STATE OF TEXAS  
LICENSED PROFESSIONAL ENGINEER  
126230

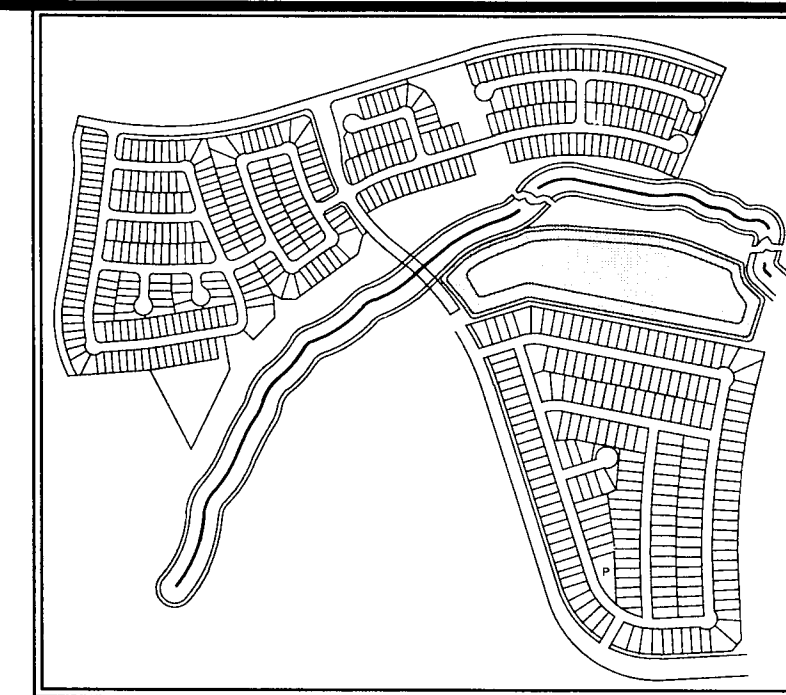
TBE NO. F-18141 06/29/2021

MONTGOMERY COUNTY  
ENGINEERING DEPARTMENT

APPROVED  
7/7/21  
DATE

**SHEET 13 OF 19**

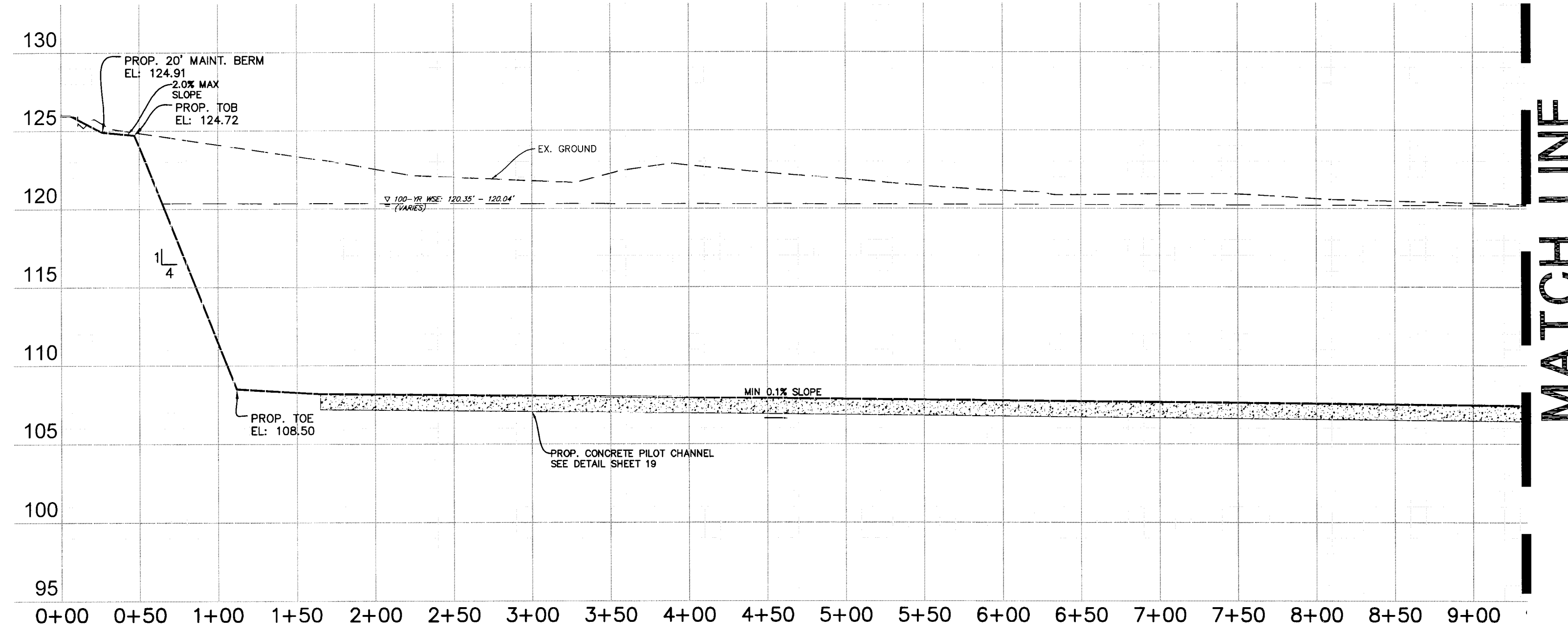
ELEVATION LAND SOLUTIONS - TOWNSEND RESERVE PHASE 1 CHANNEL DETENTION & MASS GRADING - PROJECT NO. 610-069007-00



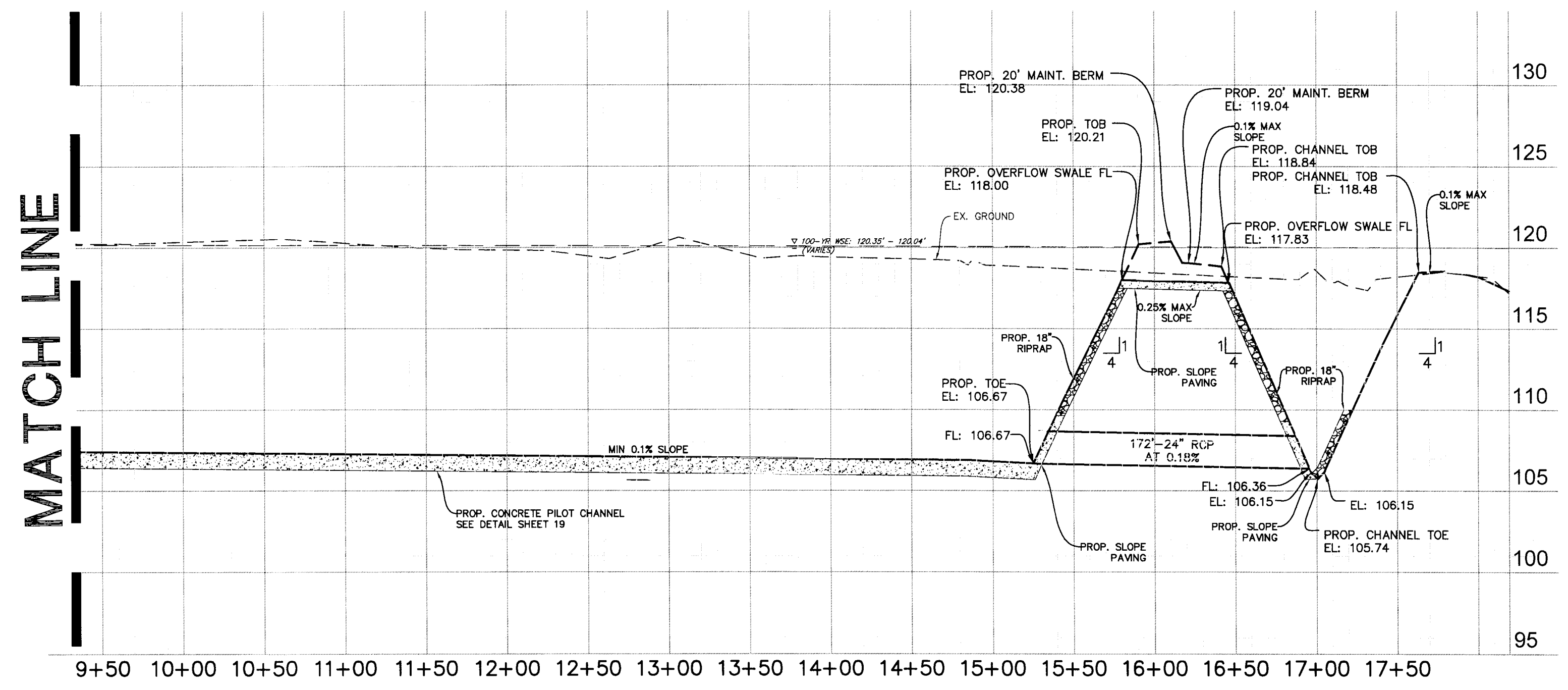
0 30 60 120  
SCALE: 1" = 60'  
VERTICAL SCALE: 1"=4'

KEY MAP

**DETENTION POND PROFILE  
STA 00+00 TO STA 9+50**



**DETENTION POND PROFILE  
STA 9+50 TO STA 18+00**



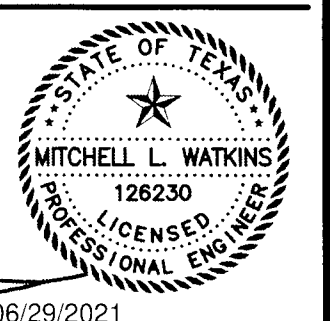
**BENCHMARKS:**  
SOURCE BENCHMARK:  
ELEVATIONS SHOWN HEREON ARE BASED ON NATIONAL GEODETIC SURVEY MONUMENT DESIGNATION CONPORT, PID No. BL2014 HAVING A PUBLISHED ELEVATION OF 234.56 FEET, NAVD 1988. TEMPORARY BENCHMARK A BEING A PK NAIL SET IN ASPHALT LOCATED ON THE NORTH RIGHT-OF-WAY OF FM 242 HAVING THE FOLLOWING INFORMATION:  
NORTHING: 10,080,298.21 FEET (GRID)  
ELEVATION: 131.94 FEET  
EASTING: 3,905,916.98 FEET (GRID)  
TEMPORARY BENCHMARK B BEING A SET 5/8-INCH IRON ROD WITH CAP SET LOCATED ON THE NORTH RIGHT-OF-WAY OF FM 242 HAVING THE FOLLOWING INFORMATION:  
NORTHING: 10,080,569.09 FEET (GRID)  
EASTING: 3,904,715.89 FEET (GRID)  
ELEVATION: 118.77 FEET  
**FLOODPLAIN INFORMATION:**  
ACCORDING TO THE MAP NO. 48339C0450G & MAP NO. 48339C0600G OF THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAPS FOR MONTGOMERY COUNTY, TEXAS, DATED AUGUST 18, 2014, THE SUBJECT TRACT IS SITUATED WITHIN: UNSHADED ZONE "X"; DEFINED AS AREAS DETERMINED TO BE OUTSIDE THE 500-YEAR FLOOD PLAIN; SHADED ZONE "A"; DEFINED AS AREAS OF 100-YEAR FLOOD WITHOUT BASE FLOOD ELEVATIONS.

THIS FLOOD STATEMENT DOES NOT IMPLY THAT THE PROPERTY OR STRUCTURES THEREON WILL BE FREE FROM FLOODING OR FLOOD DAMAGE, ON RARE OCCASIONS FLOODS CAN AND WILL OCCUR AND FLOOD HEIGHTS MAY BE INCREASED BY MAN-MADE OR NATURAL CAUSES. THIS FLOOD STATEMENT SHALL NOT CREATE LIABILITY ON THE PART OF THE SURVEYOR.

| DATE | REVISION | APP. |
|------|----------|------|
|      |          |      |

**DETENTION POND PROFILE**

ENGINEER'S SEAL  
MITCH WATKINS  
2445 TECHNOLOGY FOREST  
BLVD. SUITE 200  
THE WOODLANDS, TX 77381  
(832) 823-2200  
TBPE NO. F-18141 06/29/2021

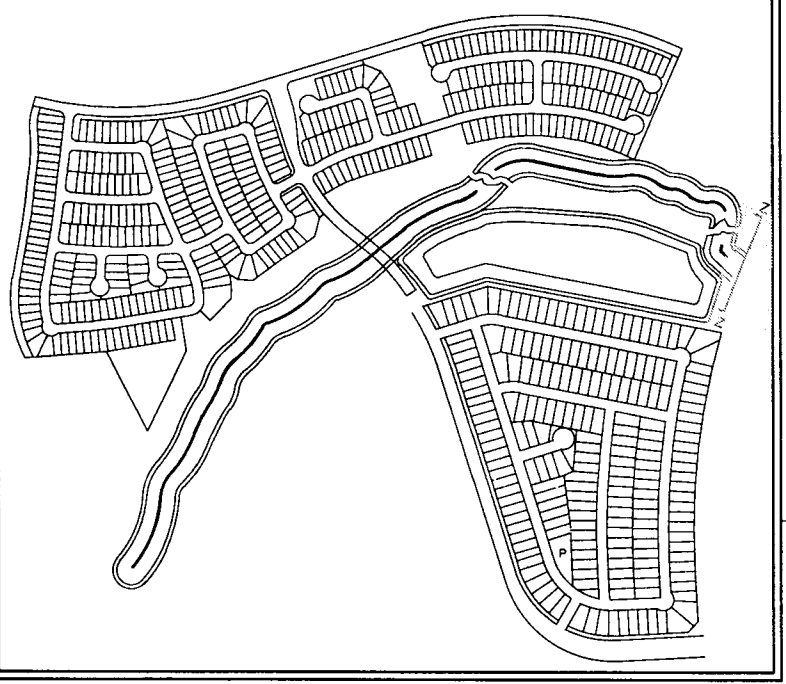


MONTGOMERY COUNTY  
ENGINEERING DEPARTMENT  
APPROVED  
DATE 7/1/21

ELEVATION LAND SOLUTIONS - TOWNSEND RESERVE PHASE 1 CHANNEL DETENTION & MASS GRADING - PROJECT NO. 610.069007.00

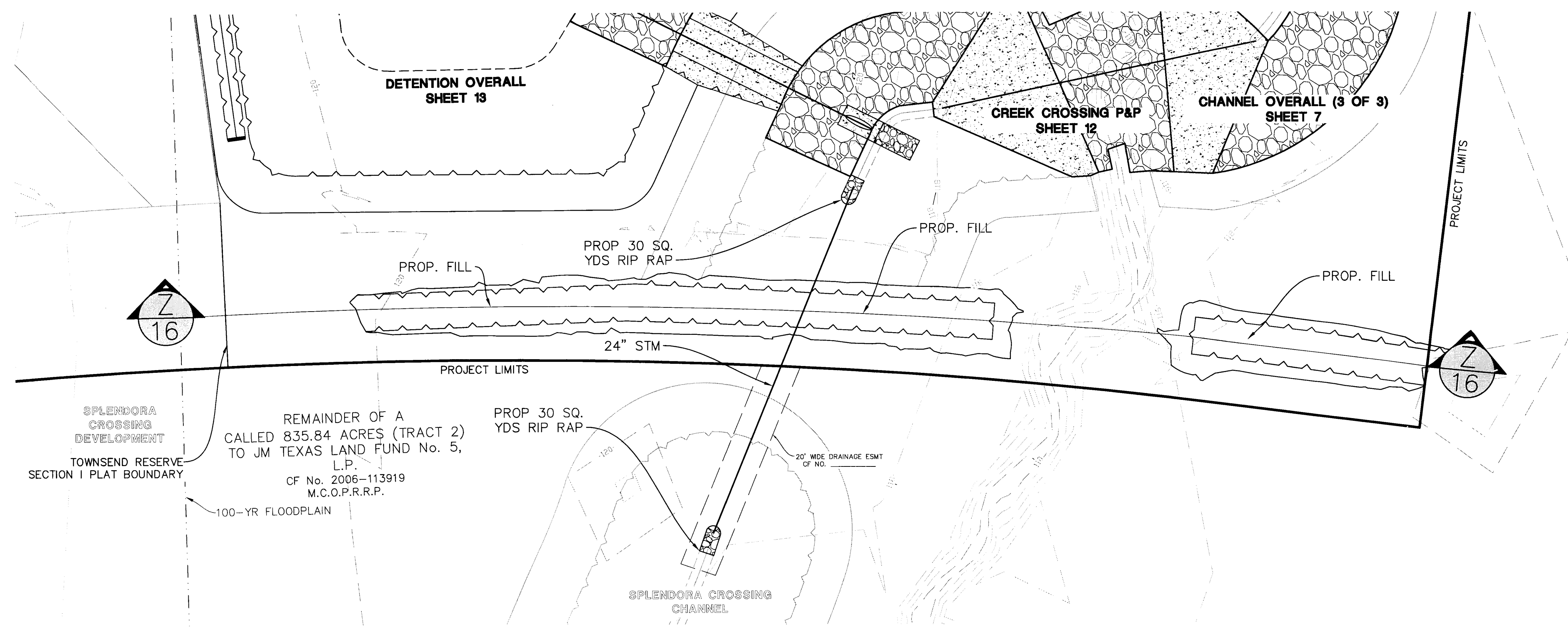
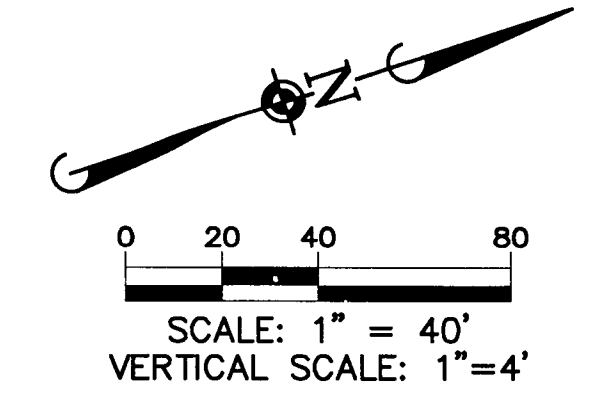




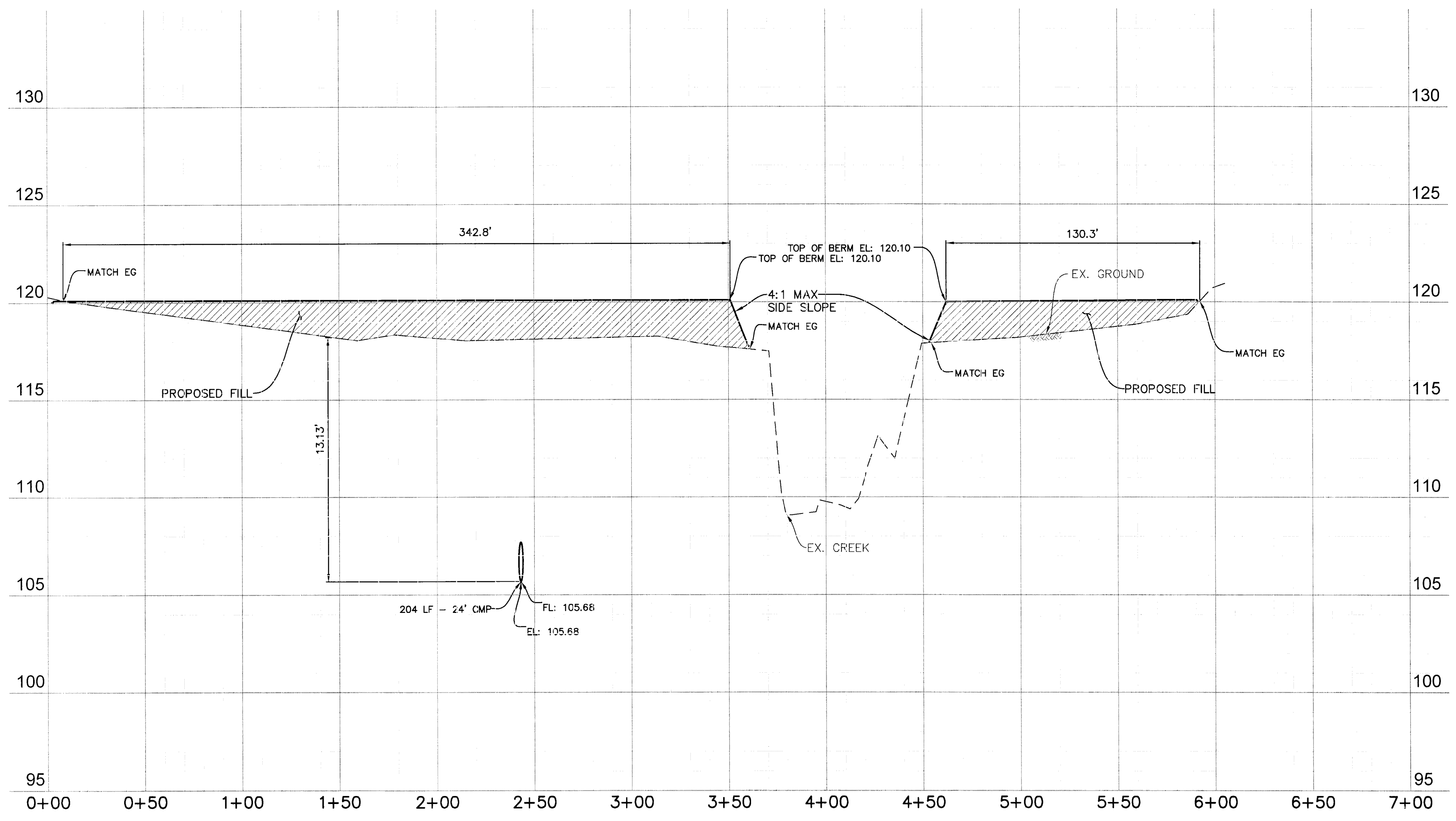


**ELEVATION**  
land solutions  
TBPPE REGISTRATION NUMBER F-18141  
2445 TECHNOLOGY FOREST BLVD, SUITE 200  
THE WOODLANDS, TX 77381 832-823-2200

KEY MAP



**INTERIM RESTRICTOR CROSS-SECTION Z-Z**



**BENCHMARKS:**  
SOURCE BENCHMARK:  
ELEVATIONS SHOWN HEREON ARE BASED ON NATIONAL GEODETIC SURVEY MONUMENT DESIGNATION CONPORT, PID No. BL2014 HAVING A PUBLISHED ELEVATION OF 234.56 FEET, NAVD 1988. TEMPORARY BENCHMARK A BEING A PK NAIL SET IN ASPHALT LOCATED ON THE NORTH RIGHT-OF-WAY OF FM 242 HAVING THE FOLLOWING INFORMATION:  
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| DATE | REVISION | APP. |
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|      |          |      |
|      |          |      |

**INTERIM RESTRICTOR STRUCTURE**

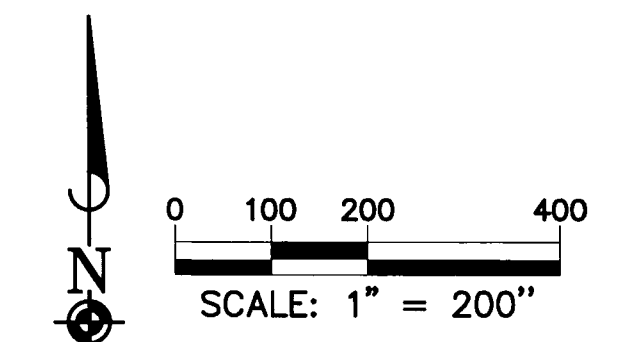
ENGINEER'S SEAL  
MITCH WATKINS  
2445 TECHNOLOGY FOREST  
BLVD, SUITE 200  
THE WOODLANDS, TX 77381  
(832) 823-2200  
128230  
PROFESSIONAL ENGINEER  
STATE OF TEXAS  
06/29/2021  
TBPPE NO. F-18141

MONTGOMERY COUNTY  
ENGINEERING DEPARTMENT  
APPROVED  
7/7/21  
DATE

ELEVATION LAND SOLUTIONS - TOWNSEND RESERVE PHASE 1 CHANNEL DETENTION & MASS GRADING - PROJECT NO. 610-069007.00



RESIDUE OF  
CALLED 1,595.09 ACRES  
TO CET LIMITED  
CF No. 2005-029279  
MCOPRRP



F.M. 2090  
(120' WIDE  
AS OCCUPIED)

100 YR FLOODPLAIN

**FILL NOTES:**

- EXISTING DRAINAGE SWALES: ALL EXISTING DRAINAGE SWALES SHALL BE FILLED AS SHOWN WITH MATERIAL FROM EXISTING ADJACENT SPOIL BANKS IN MAXIMUM 8" LOOSE LIFTS AND COMPACTED TO 95% PROCTOR DENSITY AS PER AASHTO TEST METHOD T-99.
- EXISTING DRAINAGE SWALES: ALL EXISTING DRAINAGE SWALES UNDER PROPOSED CONCRETE PAVEMENT SHALL BE CLEANED, MUCKED OUT AND SCARIFIED TO A MINIMUM DEPTH OF 6" AND FILLED AS SPECIFIED ABOVE IN FILL NOTE NO. 1 NO SEPARATE PAY.
- ROADWAY EMBANKMENT: STRIP 3" OF VEGETATION FROM AREA TO BE FILLED AND RE-COMPACT SOIL TO 95% PROCTOR DENSITY. PLACE FILL MATERIAL AS SPECIFIED IN FILL NOTE NO. 1

**GENERAL NOTES:**

- ALL ROAD ELEVATIONS SHOWN ARE TOP OF CURB UNLESS OTHERWISE NOTED. PROPOSED TOP OF CURBS ARE BASED ON 6" CURB ELEVATIONS. WHERE 4"x12" CURBS ARE TO BE PLACED, THE ACTUAL TOP OF CURB WILL BE 0.17' LESS THAN THE ELEVATION CALLED OUT ON THE PLANS.
- ALL ROADWAY DIMENSIONS ARE TO EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.

**BENCHMARKS:**

SOURCE BENCHMARK:  
ELEVATIONS SHOWN HEREON ARE BASED ON NATIONAL GEODETIC SURVEY MONUMENT DESIGNATION CONPT, PID No. BL2014 HAVING A PUBLISHED ELEVATION OF 234.56 FEET, NAVD 1988. TEMPORARY BENCHMARK A BEING A PK NAIL SET IN ASPHALT LOCATED ON THE NORTH RIGHT-OF-WAY OF FM 242 HAVING THE FOLLOWING INFORMATION:  
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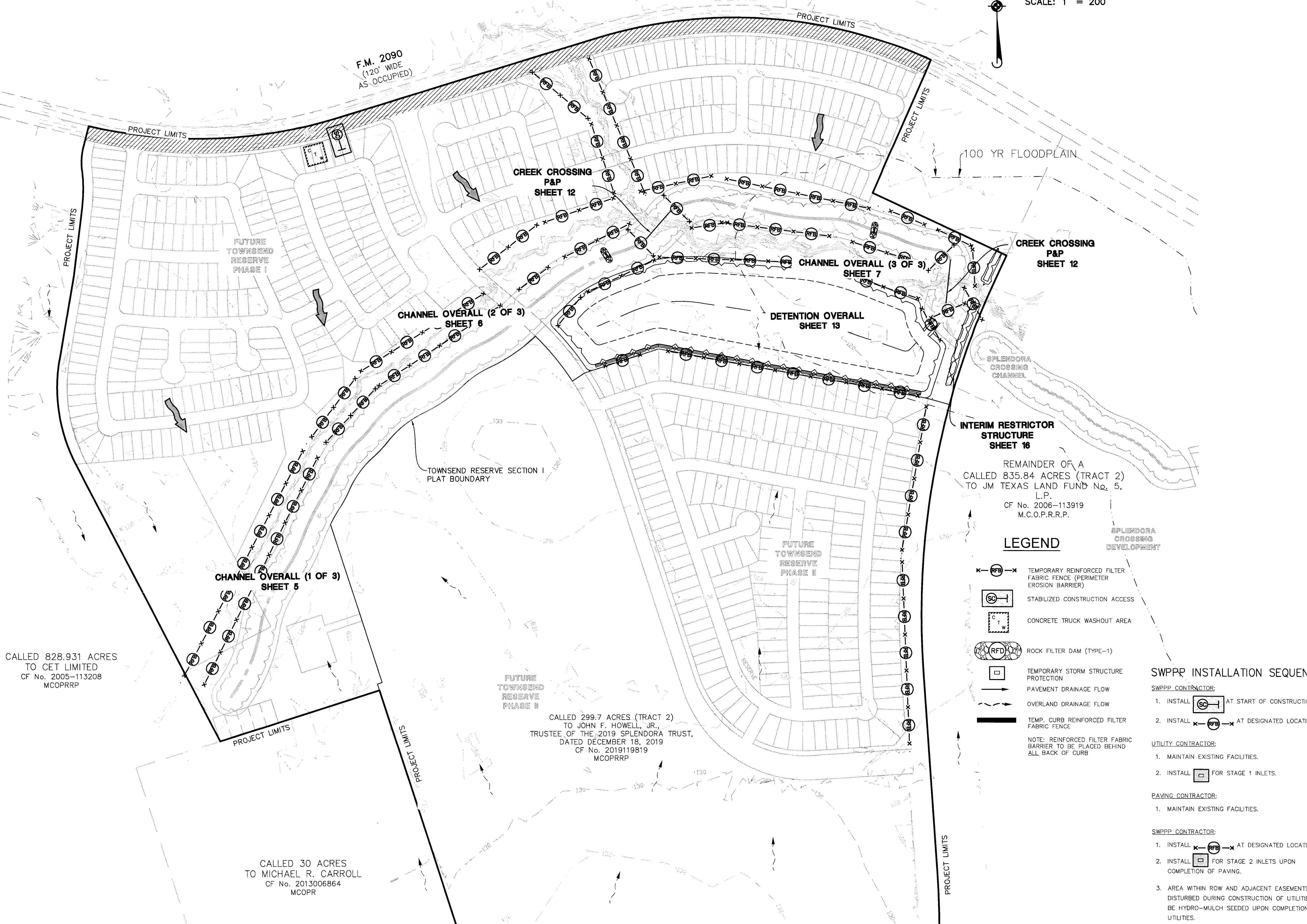
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| DATE | REVISION | APP. |
|------|----------|------|
|      |          |      |

**STORM WATER POLLUTION PREVENTION PLAN**

ENGINEER'S SEAL  
**MITCH WATKINS**  
2445 TECHNOLOGY FOREST  
BLVD, SUITE 200  
THE WOODLANDS, TX 77381  
(832) 823-2200  
128230  
PROFESSIONAL ENGINEER  
TBPE No. F-18141 06/29/2021

MONTGOMERY COUNTY  
ENGINEERING DEPARTMENT  
APPROVED  
7/7/21  
DATE







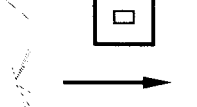



CALLLED 828.931 ACRES  
TO CET LIMITED  
CF No. 2005-113208  
MCOPRRP

CALLLED 299.7 ACRES (TRACT 2)  
TO JOHN F. HOWELL, JR.,  
TRUSTEE OF THE 2019 SPLENDORA TRUST,  
DATED DECEMBER 18, 2019  
CF No. 2019119819  
MCOPRRP

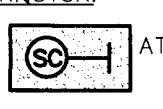

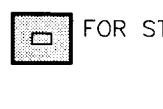
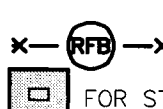
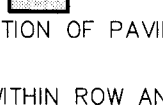
CALLLED 30 ACRES  
TO MICHAEL R. CARROLL  
CF No. 2013006864  
MCOPR

INTERIM RESTRICTOR  
STRUCTURE  
SHEET 16  
REMAINDER OF A  
CALLED 835.84 ACRES (TRACT 2)  
TO JM TEXAS LAND FUND No. 5,  
L.P.  
CF No. 2006-113919  
M.C.O.P.R.R.P.

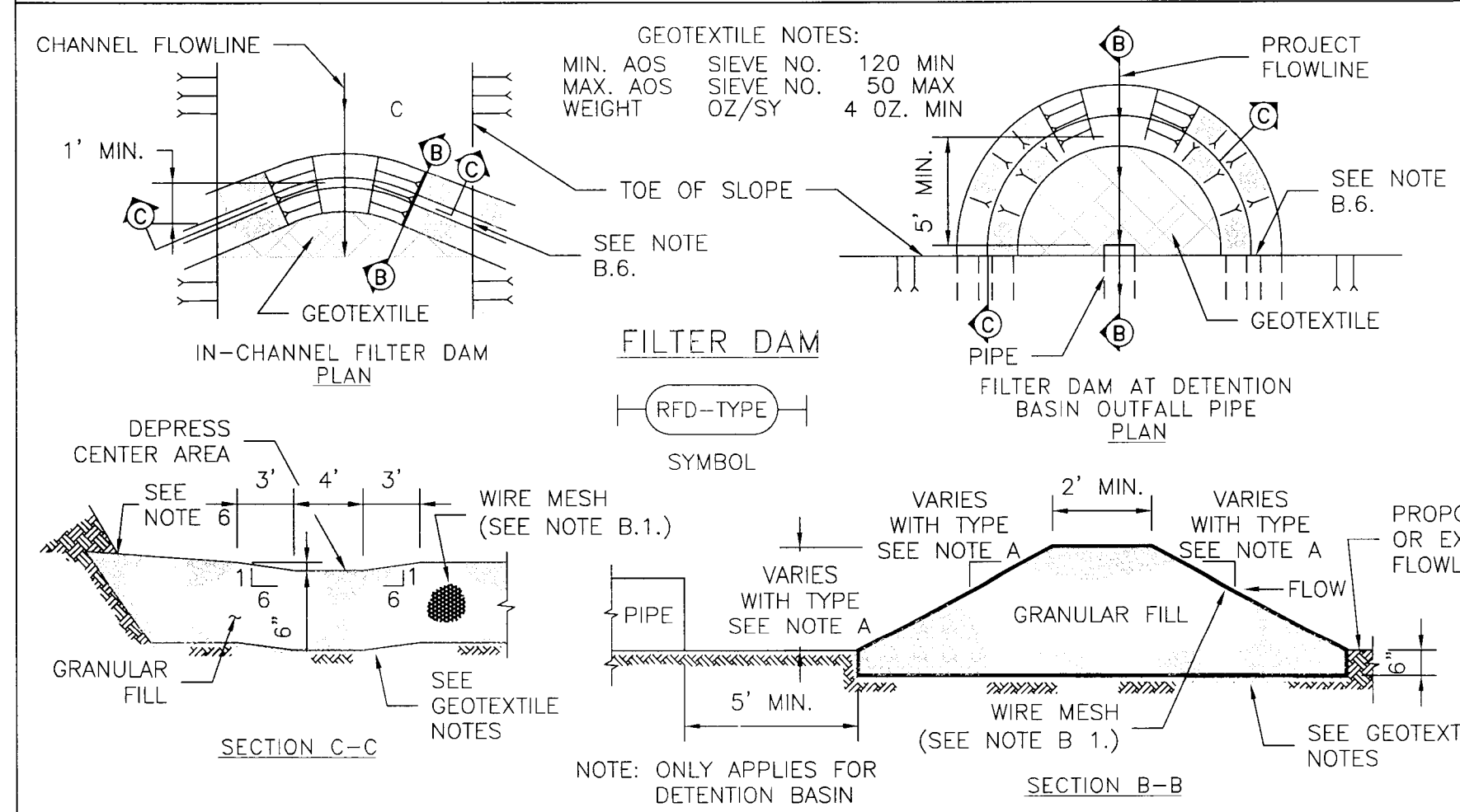
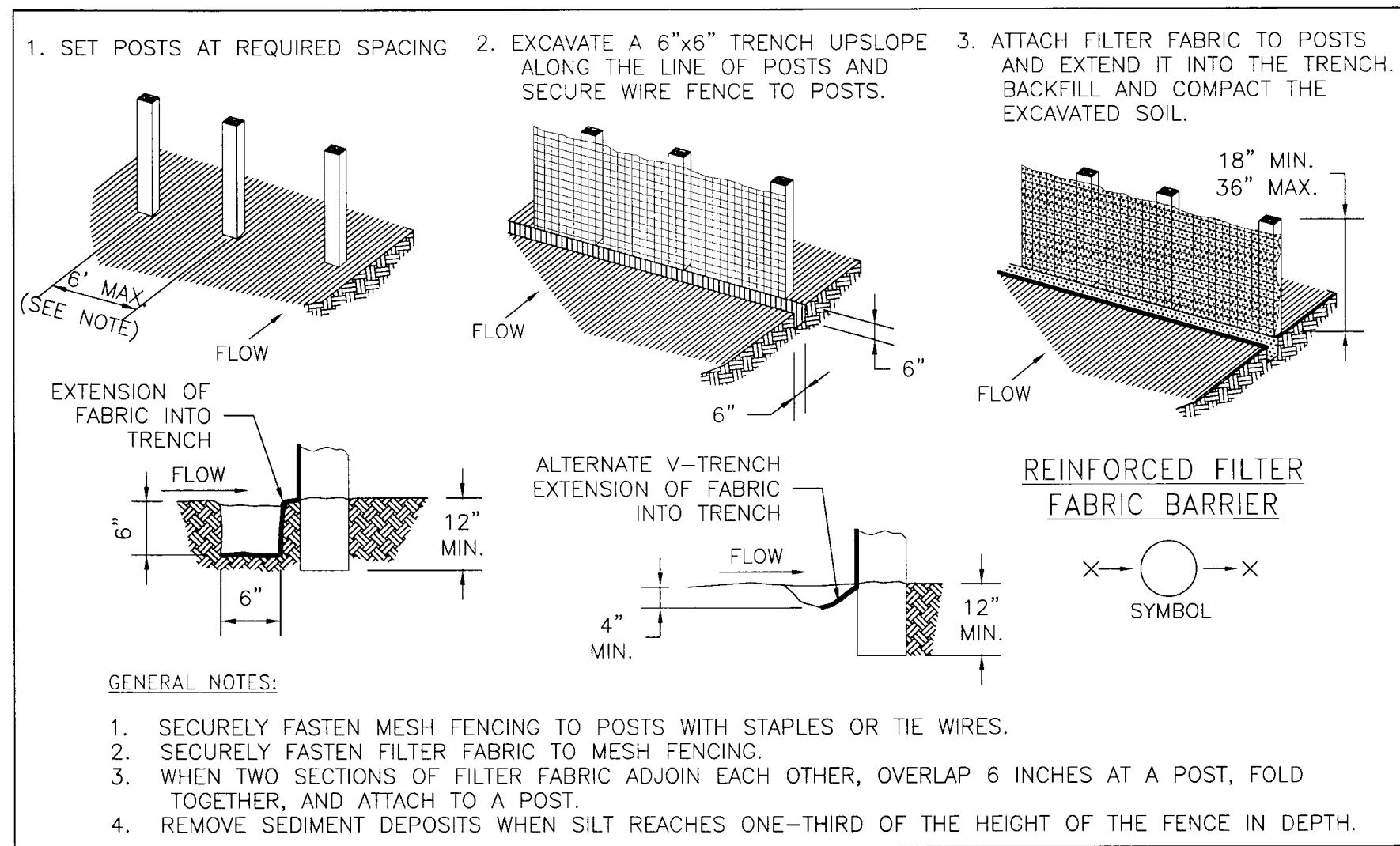
**LEGEND**

-  TEMPORARY REINFORCED FILTER FABRIC FENCE (PERIMETER EROSION BARRIER)
  -  STABILIZED CONSTRUCTION ACCESS
  -  CONCRETE TRUCK WASHOUT AREA
  -  ROCK FILTER DAM (TYPE-1)
  -  TEMPORARY STORM STRUCTURE PROTECTION
  -  PAVEMENT DRAINAGE FLOW
  -  OVERLAND DRAINAGE FLOW
  -  TEMP. CURB REINFORCED FILTER FABRIC FENCE
- NOTE: REINFORCED FILTER FABRIC BARRIER TO BE PLACED BEHIND ALL BACK OF CURB

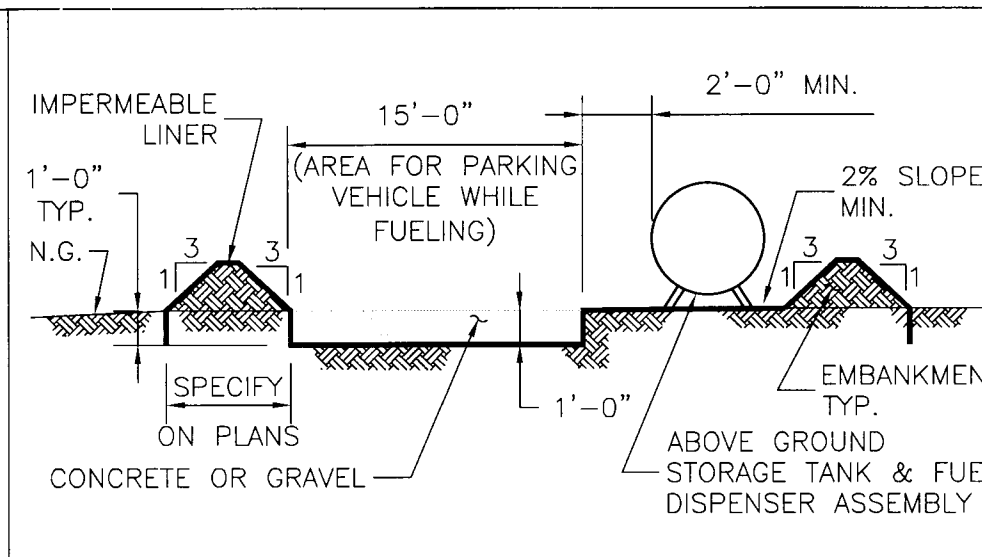
**SWPPP INSTALLATION SEQUENCE**

- SWPPP CONTRACTOR:**
- INSTALL  AT START OF CONSTRUCTION.
  - INSTALL  AT DESIGNATED LOCATIONS.
- UTILITY CONTRACTOR:**
- MAINTAIN EXISTING FACILITIES.
  - INSTALL  FOR STAGE 1 INLETS.
- PAVING CONTRACTOR:**
- MAINTAIN EXISTING FACILITIES.
- SWPPP CONTRACTOR:**
- INSTALL  AT DESIGNATED LOCATIONS.
  - INSTALL  FOR STAGE 2 INLETS UPON COMPLETION OF PAVING.
  - AREA WITHIN ROW AND ADJACENT EASEMENTS DISTURBED DURING CONSTRUCTION OF UTILITIES TO BE HYDRO-MULCH SEEDDED UPON COMPLETION OF UTILITIES.
  - BROADCAST SEEDING OF DISTURBED AREAS AFTER FINAL GRADING.

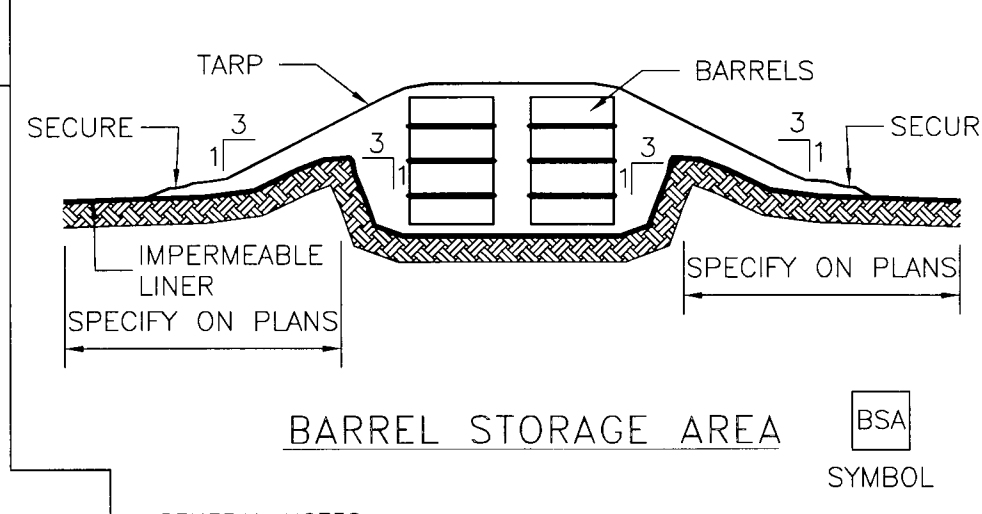
ELEVATION LAND SOLUTIONS - TOWNSEND RESERVE PHASE I CHANNEL DETENTION & MASS GRADING - PROJECT NO. 610.069007.00



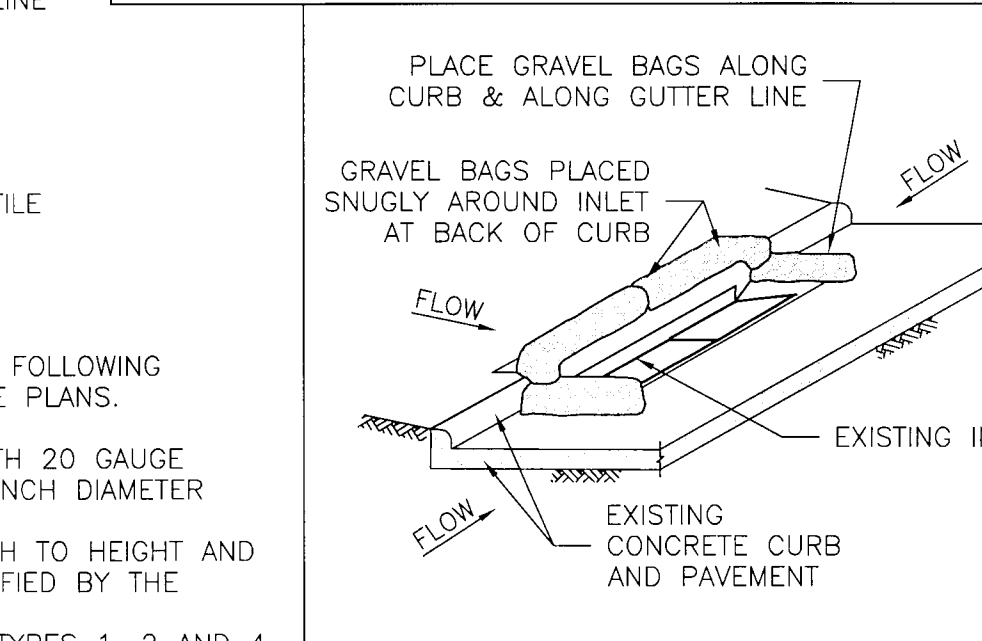
- A. TYPES OF FILTER DAMS**
- TYPE 1 (NON-REINFORCED)
    - HEIGHT - 18-24 INCHES. MEASURE VERTICALLY FROM EXISTING GROUND TO TOP OF FILTER DAM.
    - TOP WIDTH - 2 FEET (MINIMUM)
    - SLOPES - 2:1 (MAXIMUM).
  - TYPE 2 (REINFORCED)
    - HEIGHT - 18-36 INCHES. MEASURE VERTICALLY FROM EXISTING GROUND TO TOP OF FILTER DAM.
    - TOP WIDTH - 2 FEET (MINIMUM).
    - SLOPES - 2:1 (MAXIMUM).
  - TYPE 3 (REINFORCED)
    - HEIGHT - 36-48 INCHES. MEASURE VERTICALLY FROM EXISTING GROUND TO TOP OF FILTER DAM.
    - TOP WIDTH - 2 FEET (MINIMUM).
    - SLOPES - 3:1 (MAXIMUM).
  - TYPE 4 (GABION)
    - HEIGHT - 30 INCHES (MINIMUM). MEASURE VERTICALLY FROM EXISTING GROUND TO TOP OF FILTER DAM.
    - TOP WIDTH - 2 FEET (MINIMUM).
  - TYPE 5. AS SHOWN ON THE PLANS.
- B. CONSTRUCT FILTER DAMS ACCORDING TO THE FOLLOWING CRITERIA UNLESS SHOWN OTHERWISE ON THE PLANS.**
- TYPE 2 AND 3 FILTER DAMS: SECURE WITH 20 GAUGE GALVANIZED WOVEN WIRE MESH WITH 1 INCH DIAMETER HEXAGONAL OPENINGS.
  - PLACE GRANULAR FILL ON THE WIRE MESH TO HEIGHT AND SLOPES SHOWN ON PLANS OR AS SPECIFIED BY THE ENGINEER.
    - 3-5 INCHES FOR ROCK FILTER DAM TYPES 1, 2 AND 4.
    - 4-8 INCHES FOR ROCK FILTER DAM TYPE REFER TO GRANULAR FILL IN SPECIFICATION SECTION No. 02378 RIPRAP AND GRANULAR FILL.
  - FOLD WIRE MESH AT UPSTREAM SIDE OVER GRANULAR FILL AND TIGHTLY SECURED TO ITSELF ON THE DOWNSTREAM SIDE USING WIRE TIES OR HOG RINGS.
  - IN STREAMS: SECURE OR STAKE MESH TO STREAM BED PRIOR TO AGGREGATE PLACEMENT.
  - SEE HCFCD SPECIFICATION SECTION NO. 02364-FILTER DAMS.
  - EMBED ONE FOOT MINIMUM INTO SLOPE AND RAISE ONE FOOT HIGHER THAN CENTER OF DEPRESSED AREA AT SLOPE.



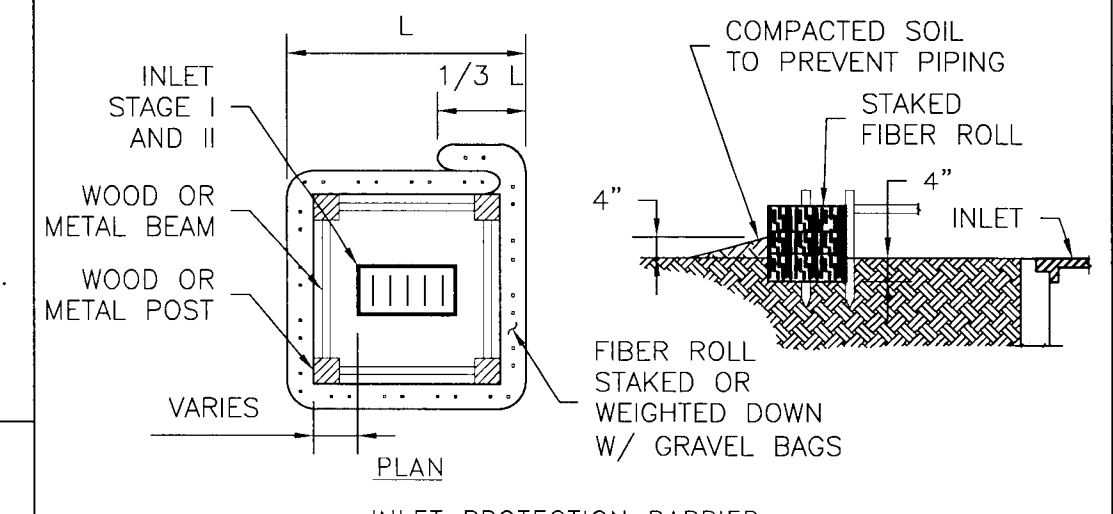
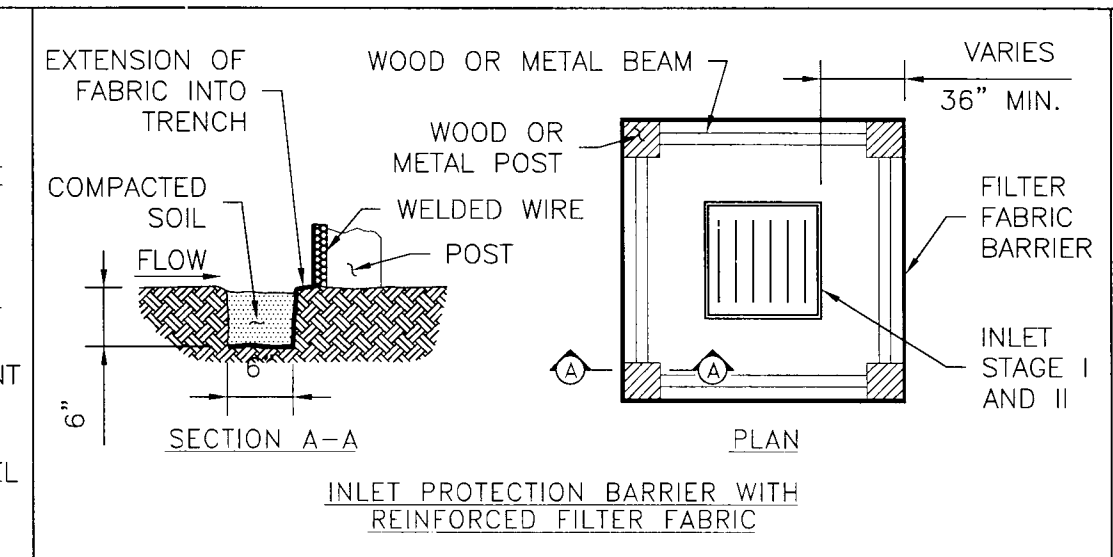
- GENERAL NOTES:**
- THE SIZE OF TANK FOUNDATION AREA DEPENDS ON THE SIZE OF ABOVE GROUND STORAGE TANK AND DISPENSER ASSEMBLY.
  - PROVIDE A MINIMUM SLOPE OF 2% TOWARD THE SUMP PIT.
  - INSTALL IMPERMEABLE LINER AS PER MANUFACTURER'S RECOMMENDATIONS.



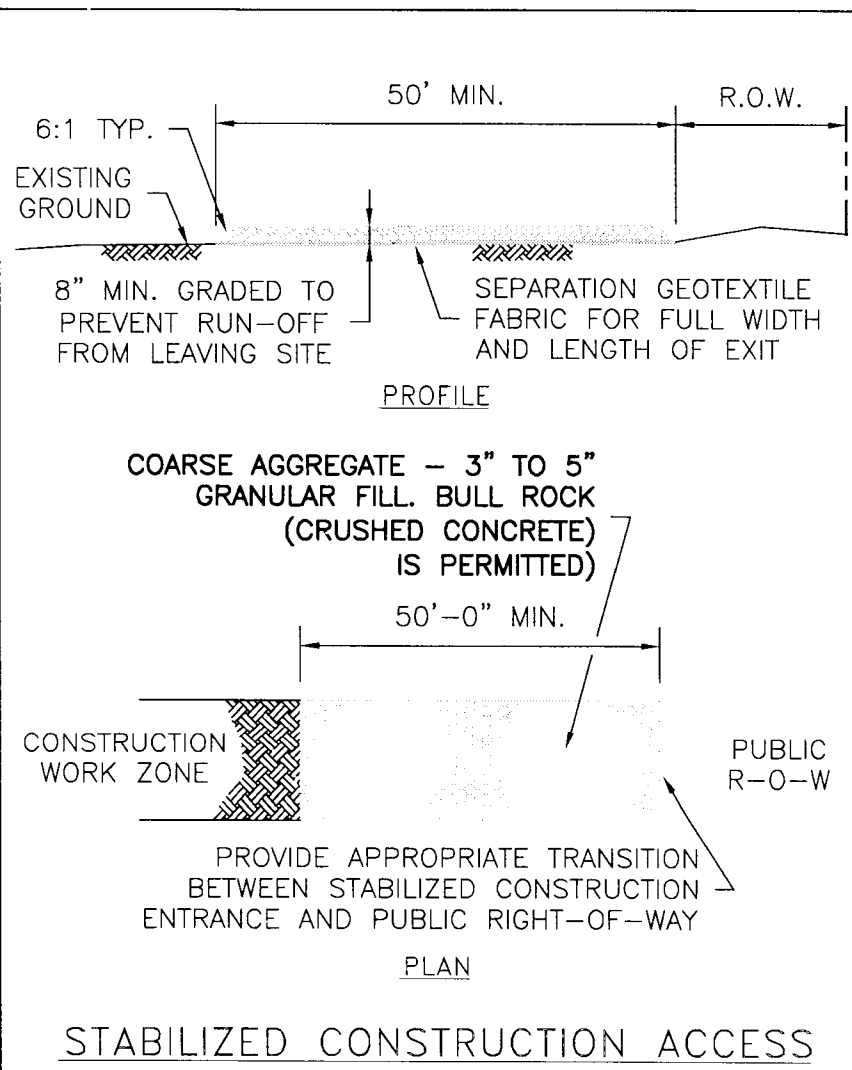
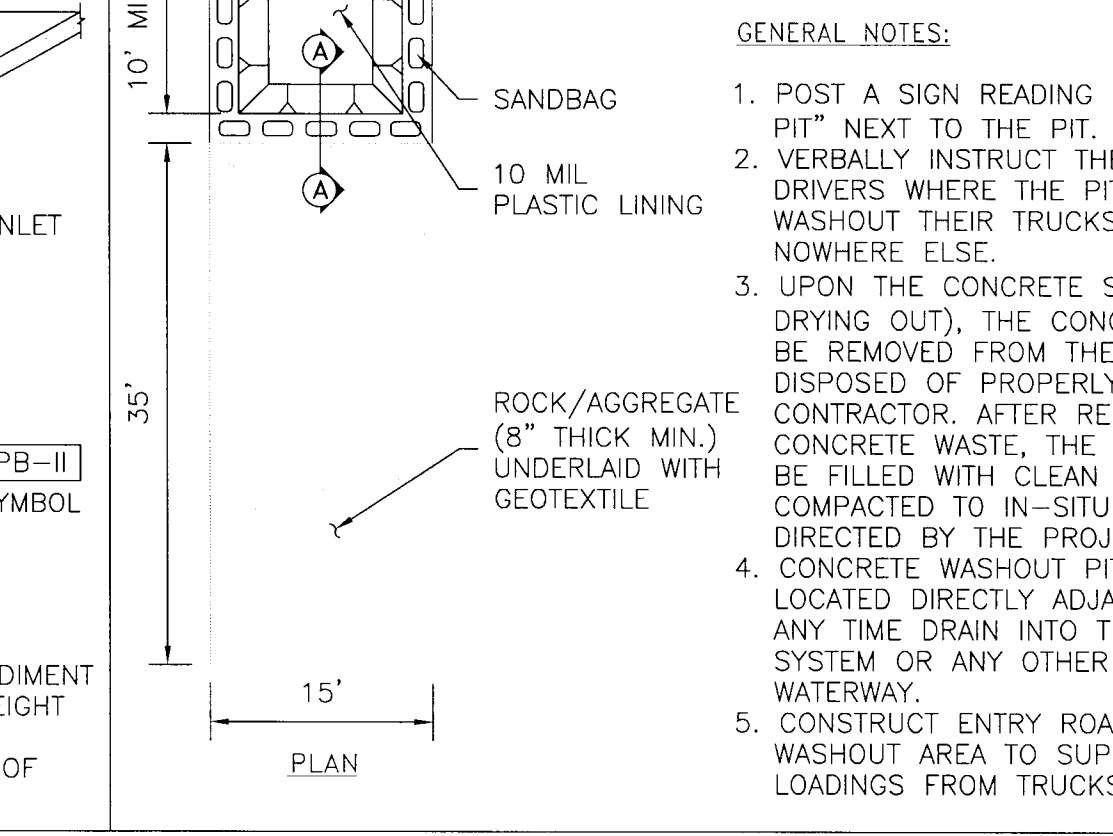
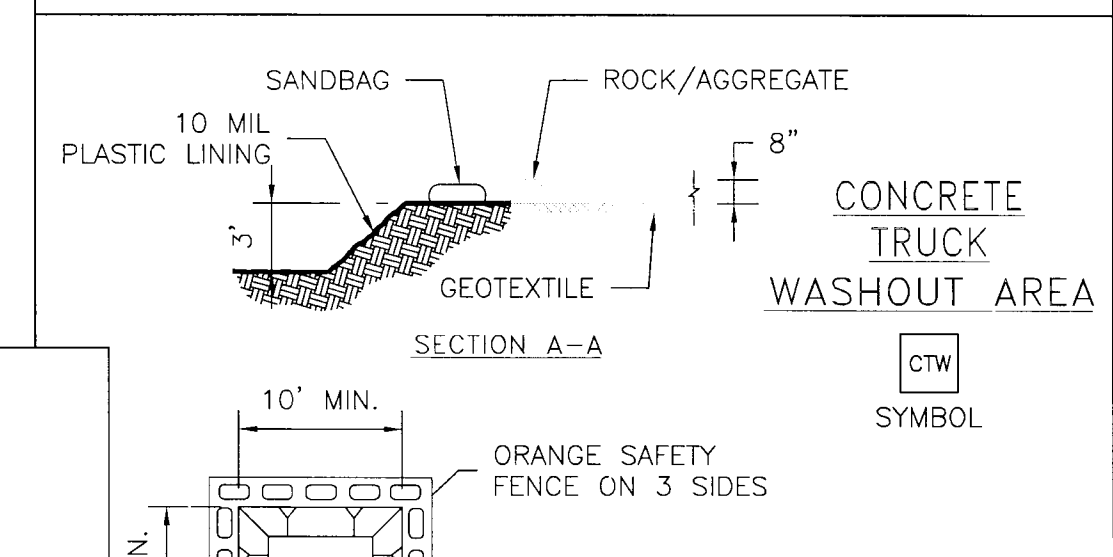
- GENERAL NOTES:**
- ALTERNATIVELY, STORE BARRELS IN AN ENCLOSED BUILDING OR SHED.
  - INSTALL IMPERMEABLE LINER AS PER MANUFACTURER'S RECOMMENDATIONS. 60 MIL MINIMUM.
  - CONSTRUCT BERMED AREA WITH VOLUME GREATER THAN OR EQUAL TO 110% VOLUME OF BARRELS.



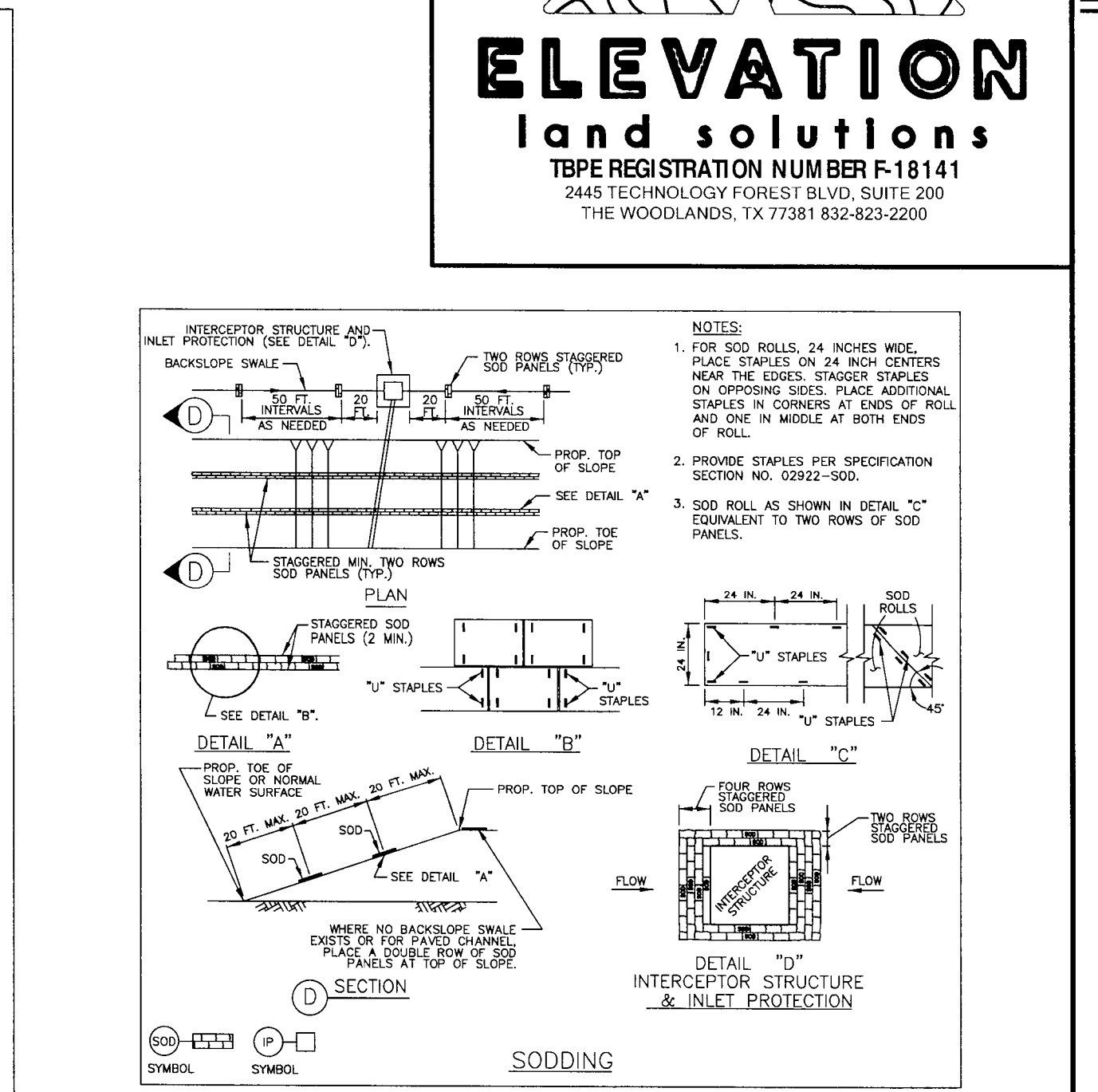
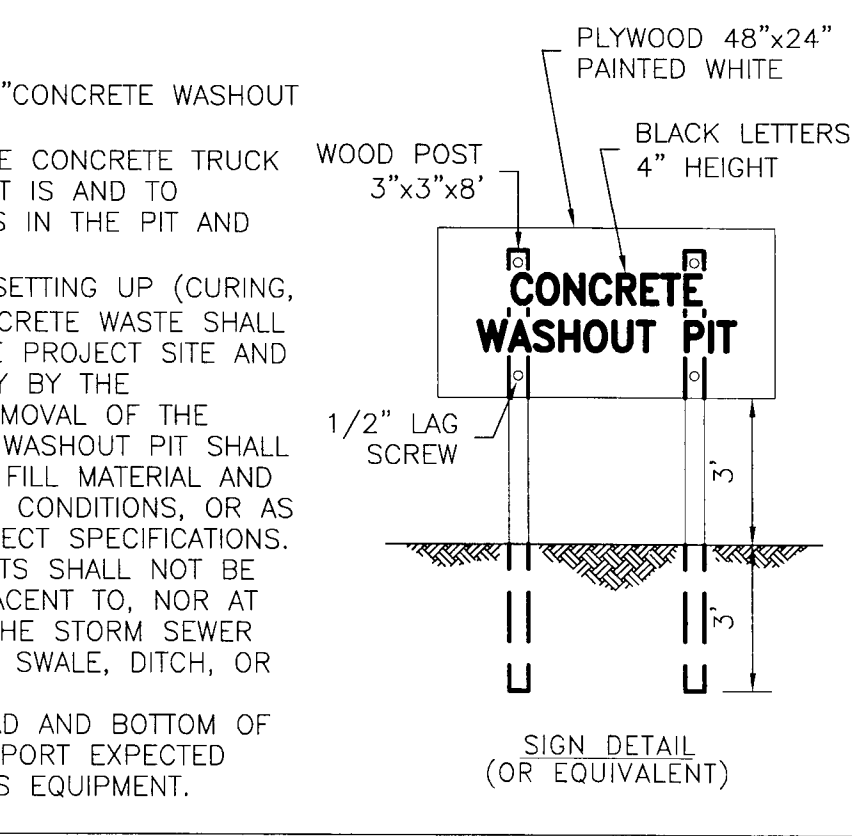
- GENERAL NOTES:**
- REMOVE SEDIMENT DEPOSIT WHEN THE SEDIMENT HAS ACCUMULATED TO ONE-THIRD THE HEIGHT OF THE BARRIER.
  - GRAVEL BAGS SHALL NOT BLOCK THROAT OF INLET UNLESS DIRECTED BY ENGINEER.



- GENERAL NOTES:**
- FIBER ROLLS WILL BE UTILIZED ONLY WHEN SITE CONDITIONS DO NOT PERMIT THE USE OF FILTER FABRIC BARRIER, AND AS APPROVED BY THE ENGINEER.



- GENERAL NOTES:**
- MINIMUM LENGTH IS AS SHOWN ON CONSTRUCTION DRAWINGS OR 50 FEET, WHICHEVER IS MORE.
  - CONSTRUCT AND MAINTAIN CONSTRUCTION EXIT WITH CONSTANT WIDTH ACROSS ITS LENGTH, INCLUDING ALL POINTS OF INGRESS OR EGRESS.
  - UNLESS SHOWN ON THE CONSTRUCTION DRAWINGS, STABILIZATION FOR OTHER AREAS WILL HAVE THE SAME AGGREGATE THICKNESS AND WIDTH REQUIREMENTS AS THE STABILIZED CONSTRUCTION EXIT.
  - WHEN SHOWN ON THE CONSTRUCTION DRAWINGS, WIDEN OR LENGTHEN STABILIZED AREA TO ACCOMMODATE A TRUCK WASHING AREA. PROVIDE OUTLET SEDIMENT TRAP FOR THE TRUCK WASHING AREA.
  - PROVIDE PERIODIC TOP DRESSING WITH ADDITIONAL COARSE AGGREGATE TO MAINTAIN THE REQUIRED DEPTH OR WHEN SURFACE BECOMES PACKED WITH MUD.
  - PERIODICALLY TURN AGGREGATE TO EXPOSE A CLEAN DRIVING SURFACE.
  - MINIMUM 14' WIDTH FOR ONE WAY TRAFFIC AND 20' WIDTH FOR TWO WAY TRAFFIC.



- NOTES:**
- FOR SOD ROLLS, 24 INCHES WIDE, PLACE STAPLES ON 24 INCH CENTERS NEAR THE EDGES. STAPLES ON OPPOSING SIDES. PLACE ADDITIONAL STAPLES IN CORNERS AT ENDS OF ROLL AND ONE IN MIDDLE AT BOTH ENDS OF ROLL.
  - PROVIDE STAPLES PER SPECIFICATION SECTION NO. 02922-SOD.
  - SOD ROLL AS SHOWN IN DETAIL "C" EQUIVALENT TO TWO ROWS OF SOD PANELS.

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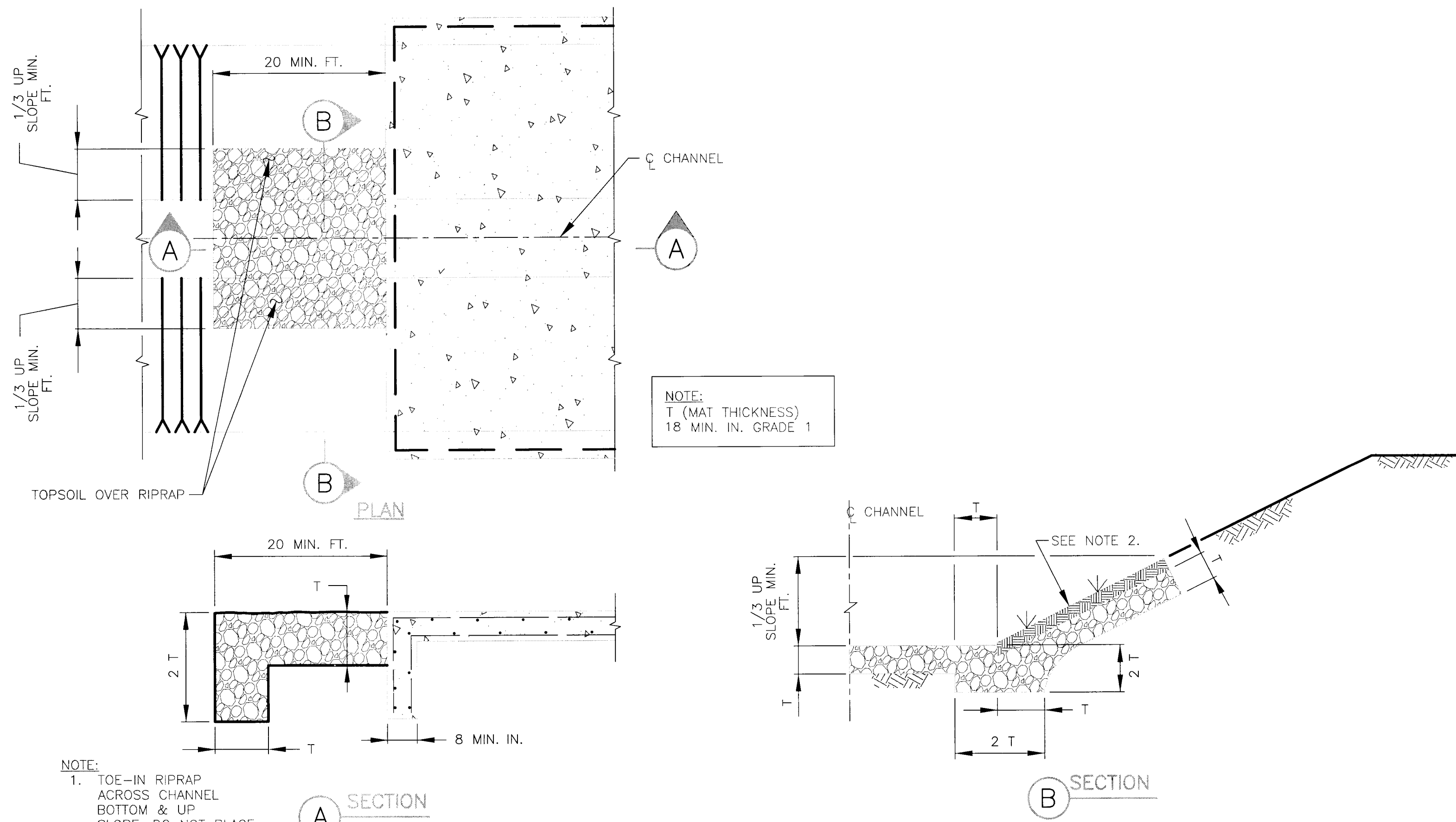
**STORM WATER POLLUTION PREVENTION DETAILS**

ENGINEER'S SEAL  
 MITCH WATKINS  
 2445 TECHNOLOGY FOREST  
 BLVD, SUITE 200  
 THE WOODLANDS, TX 77381  
 (832) 823-2200

STATE OF TEXAS  
 LICENSED PROFESSIONAL ENGINEER  
 MICHIELL L. WATKINS  
 128230  
 06/29/2021

DATE: 7/7/21  
 APPROVED: [Signature]  
 MONTGOMERY COUNTY ENGINEERING DEPARTMENT

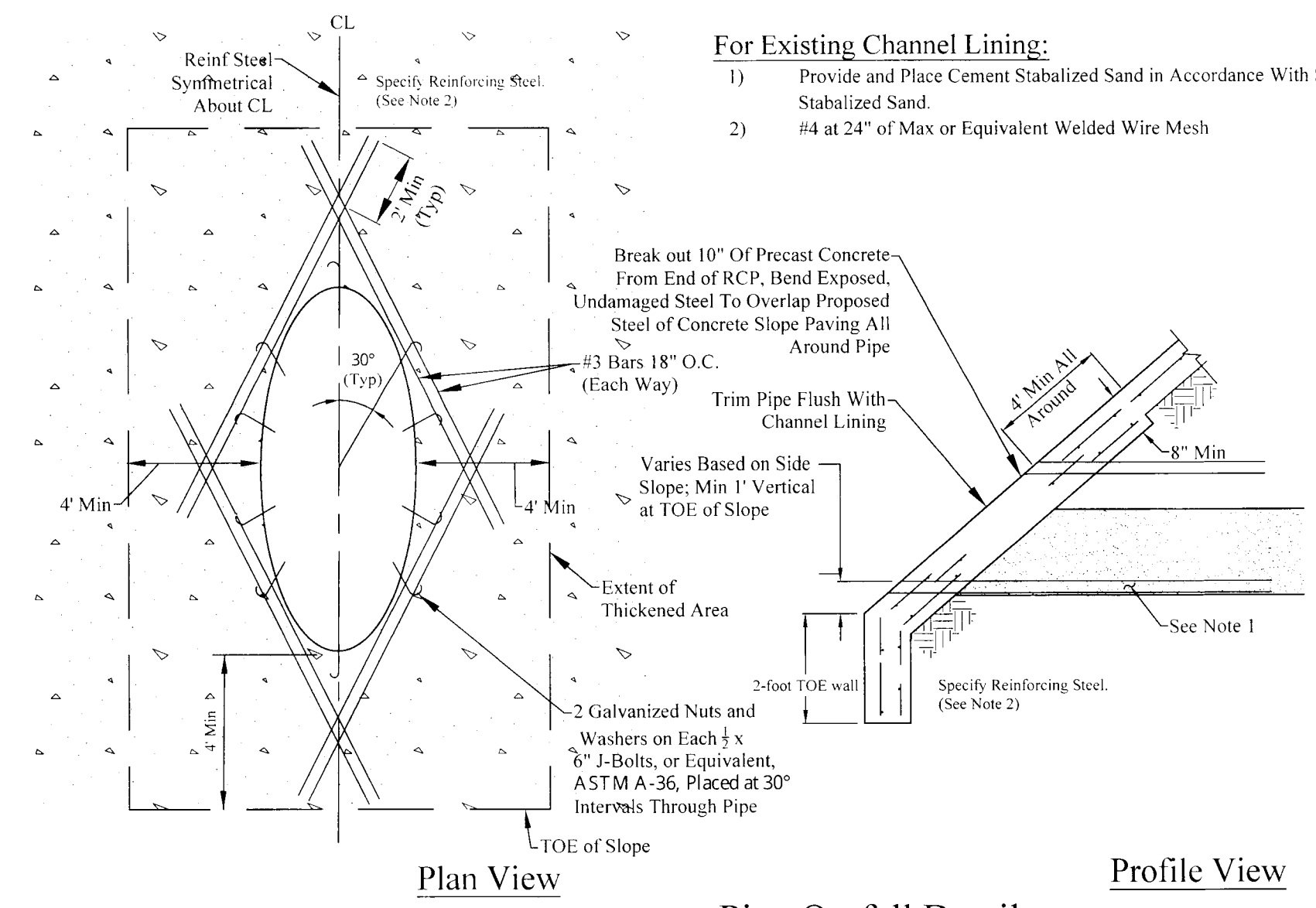




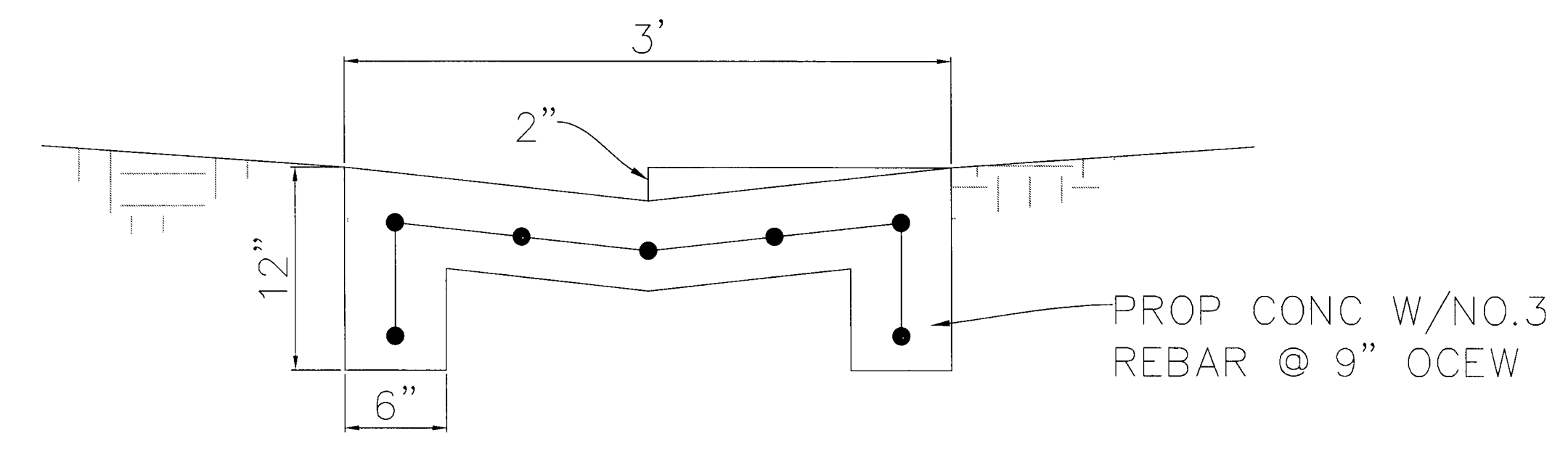
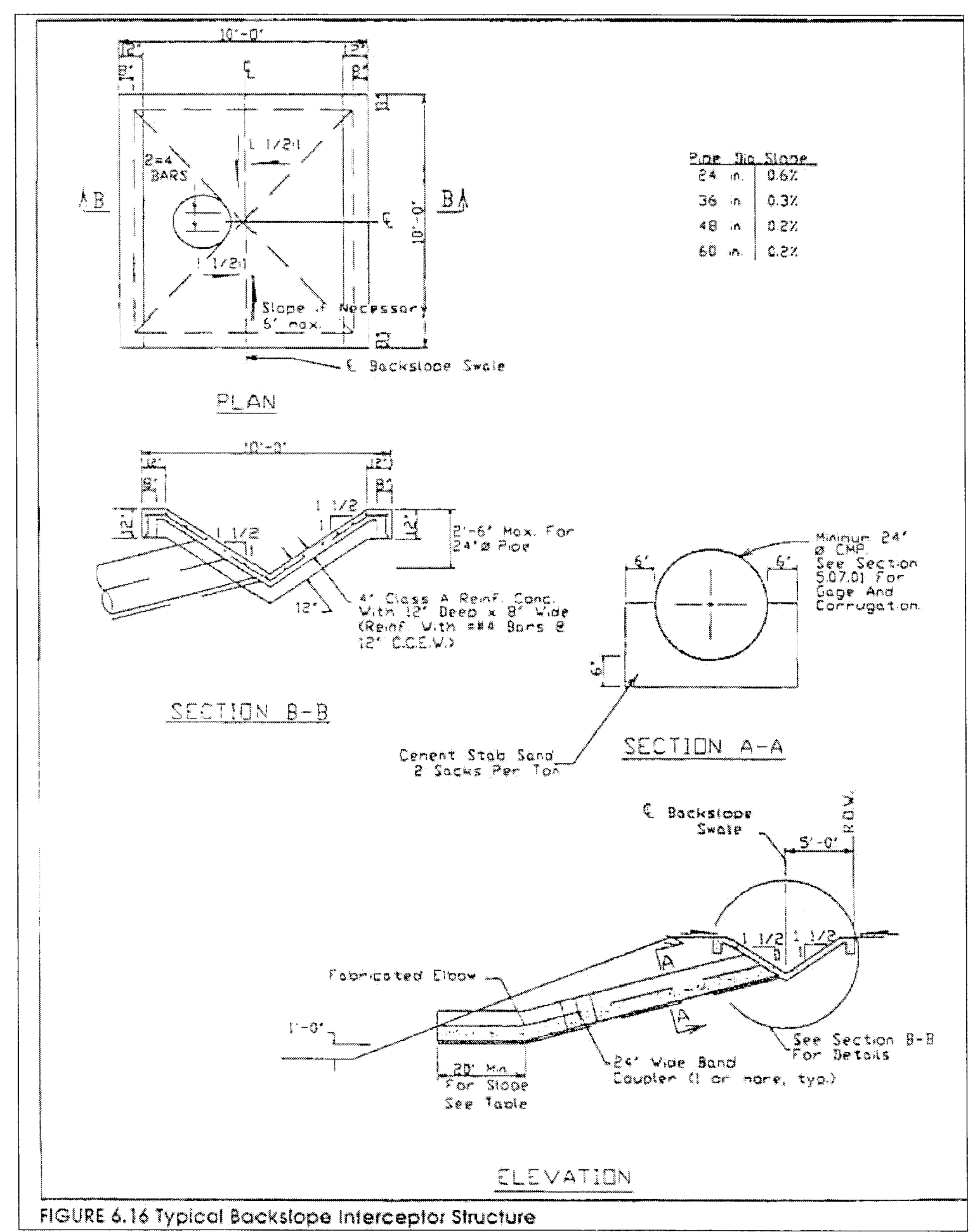
- NOTE:**
- TOE-IN RIPRAP ACROSS CHANNEL BOTTOM & UP SLOPE. DO NOT PLACE TOE AGAINST CONCRETE.
  - RIPRAP SHALL BE PLACED IN ACCORDANCE WITH SPECIFICATION SECTION 02378-RIPRAP AND GRANULAR FILL. FILL RIPRAP VOIDS AND BURY RIPRAP A MINIMUM OF 6 INCHES WITH TOPSOIL ON SIDE SLOPE AS DIRECTED BY THE ENGINEER.

**TYPICAL RIPRAP AT CONCRETE CHANNEL LINING**

**Slope Paving Detail**



**Pipe Outfall Detail**




**CONCRETE PILOT CHANNEL SECTION DETAIL N.T.S.**

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**STORM DETAILS**

ENGINEER'S SEAL  
MITCH WATKINS  
2445 TECHNOLOGY FOREST BLVD, SUITE 200  
THE WOODLANDS, TX 77381  
(832) 823-2200  
06/29/2021

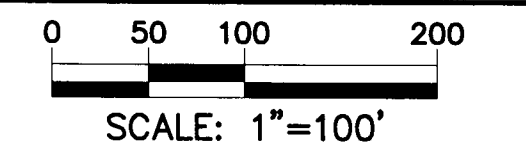


MONTGOMERY COUNTY  
ENGINEERING DEPARTMENT  
APPROVED  
7/1/21  
DATE

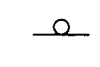



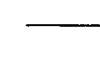

FOR APPROVAL  
ELEVATION LAND SOLUTIONS - MAGNOLIA SPRINGS SEC. 1 - PROJECT NO. 610.056006.00



**ELEVATION**  
land solutions  
TBPE REGISTRATION NUMBER F-18141  
2445 TECHNOLOGY FOREST BLVD, SUITE 200  
THE WOODLANDS, TX 77381 832-823-2200



**LEGEND**

-  STOP SIGN W/ STREET NAME
-  DUAL STREET NAME SIGN
-  SPEED LIMIT SIGN
-  TYPE III BARRICADE
-  PROPOSED 6" CURB
-  PROPOSED 4"x12" CURB

**TRAFFIC BUTTONS & MEDIAN NOSES:**

- 1) PLACE BLUE TRAFFIC BUTTONS 6" OFF THE CENTERLINE OF THE ROADWAY TOWARDS THE RELATED FLUSH VALVE.
- 2) ALL MEDIAN NOSES SHALL BE PAINTED YELLOW.

**STREET SIGN NOTES:**

- 1) CONTRACTOR TO VERIFY ALL STREET SIGNS WITH THE RECORDED PLAT PRIOR TO ORDERING THE SIGNS.
- 2) ALL R-1 STOP SIGNS SHALL BE 30" X 30" DIAMOND GRADE SHEETING.
- 3) PLACE STREET NAME SIGNS 3" ABOVE STOP SIGNS.
- 4) ALL STREET NAME SIGNS SHALL BE 9" BLADE.
- 5) CONTRACTOR TO COORDINATE STREET SIGN COLOR AND TEXT STYLE WITH THE ENGINEER PRIOR TO ORDERING STREET SIGNS.
- 6) ALL COMBINATION STREET AND REGULATORY SIGNS SHALL BE LOCATED AT CURB RETURNS UNLESS OTHERWISE NOTED.

**BENCHMARKS:**

SOURCE BENCHMARK:

ELEVATIONS SHOWN HEREON ARE BASED ON NATIONAL GEODETIC SURVEY MONUMENT DESIGNATION, PID NO. BL2005 HAVING PUBLISHED INFORMATION AS FOLLOWS:  
 LATITUDE 30°08'28" NORTH  
 LONGITUDE 95°37'49" WEST  
 NAD 83  
 ELEVATION 166.99 FEET, NAVD88

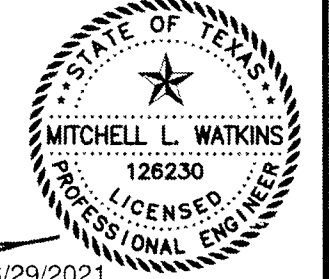
**FLOODPLAIN INFORMATION:**  
 ACCORDING TO THE MAP NO. 48339C0325G OF THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAPS FOR MONTGOMERY COUNTY, TEXAS, DATED AUGUST 18, 2014, THE SUBJECT TRACT IS SITUATED WITHIN: UNSHADED ZONE "X"; DEFINED AS AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD;

THIS FLOOD STATEMENT DOES NOT IMPLY THAT THE PROPERTY OR STRUCTURES THEREON WILL BE FREE FROM FLOODING OR FLOOD DAMAGE, ON RARE OCCASIONS FLOODS CAN AND WILL OCCUR AND FLOOD HEIGHTS MAY BE INCREASED BY MAN-MADE OR NATURAL CAUSES. THIS FLOOD STATEMENT SHALL NOT CREATE LIABILITY ON THE PART OF THE SURVEYOR.

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**TRAFFIC SIGNAGE AND PAVEMENT MARKINGS**

ENGINEER'S SEAL  
 MITCHELL L. WATKINS  
 2445 TECHNOLOGY FOREST  
 BLVD, SUITE 200  
 THE WOODLANDS, TX 77381  
 (832) 823-2200



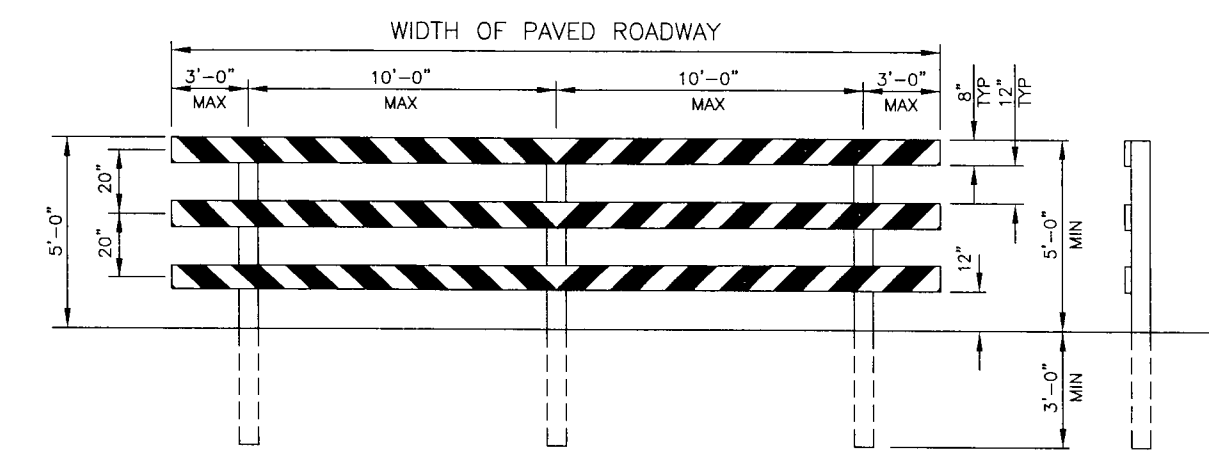
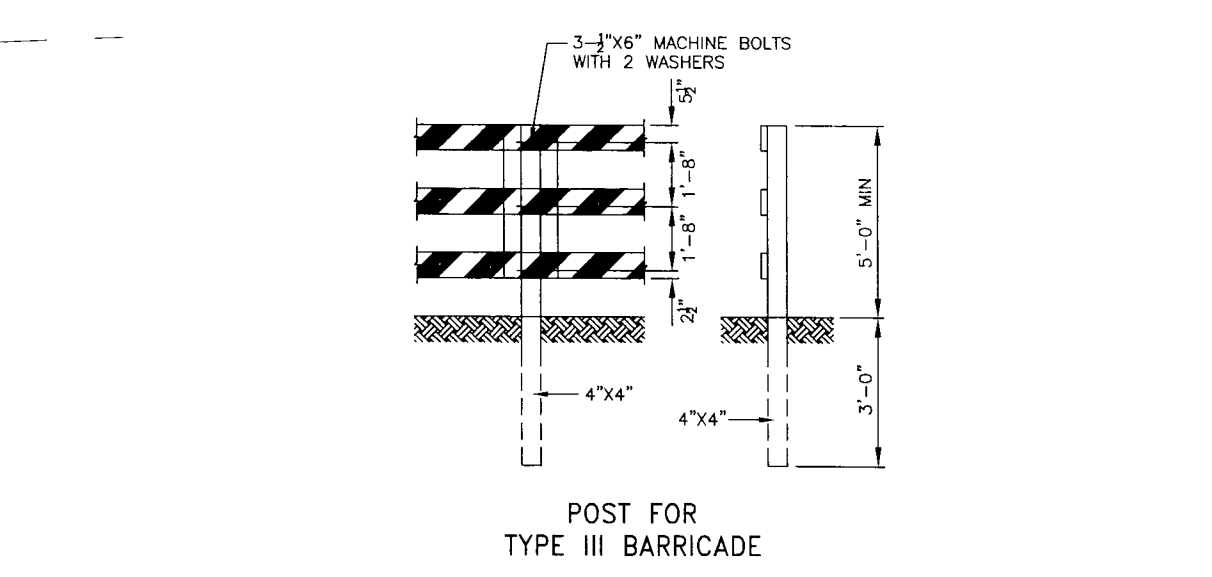
*M.L. Watkins*  
 TBPE NO. F-18141 06/29/2021

MONTGOMERY COUNTY  
 ENGINEERING DEPARTMENT

*WJ*  
 APPROVED

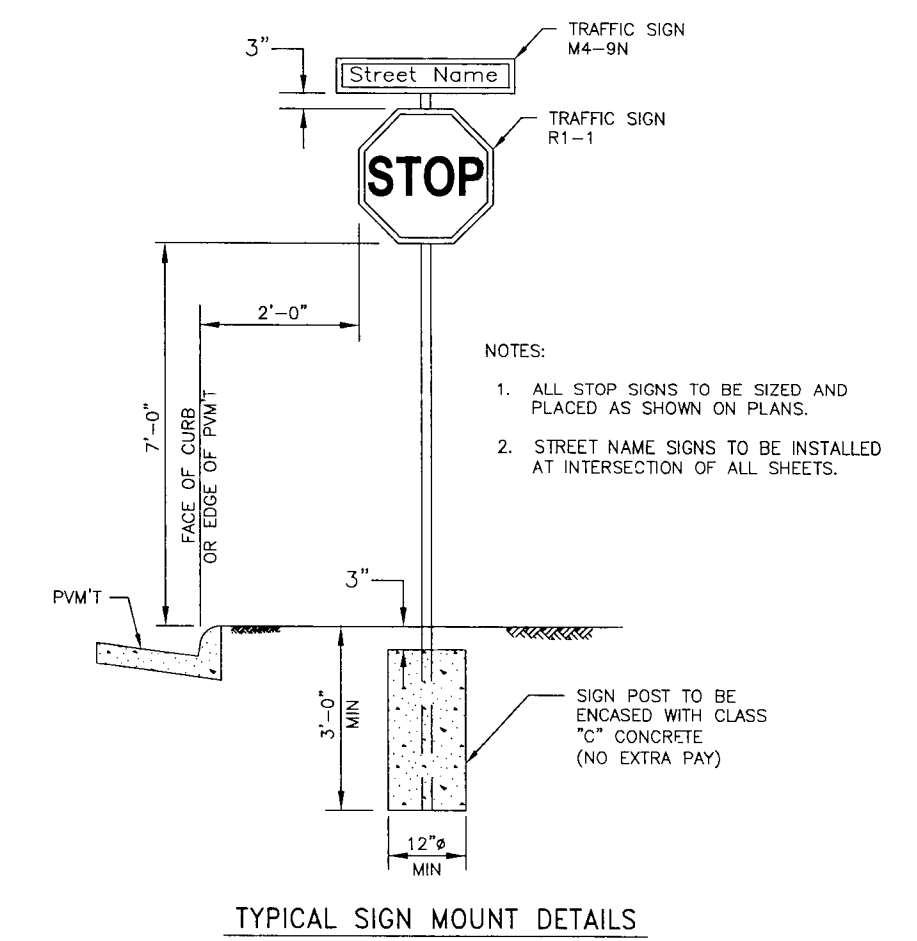
DATE 7/7/21

**SHEET 10 OF 40**

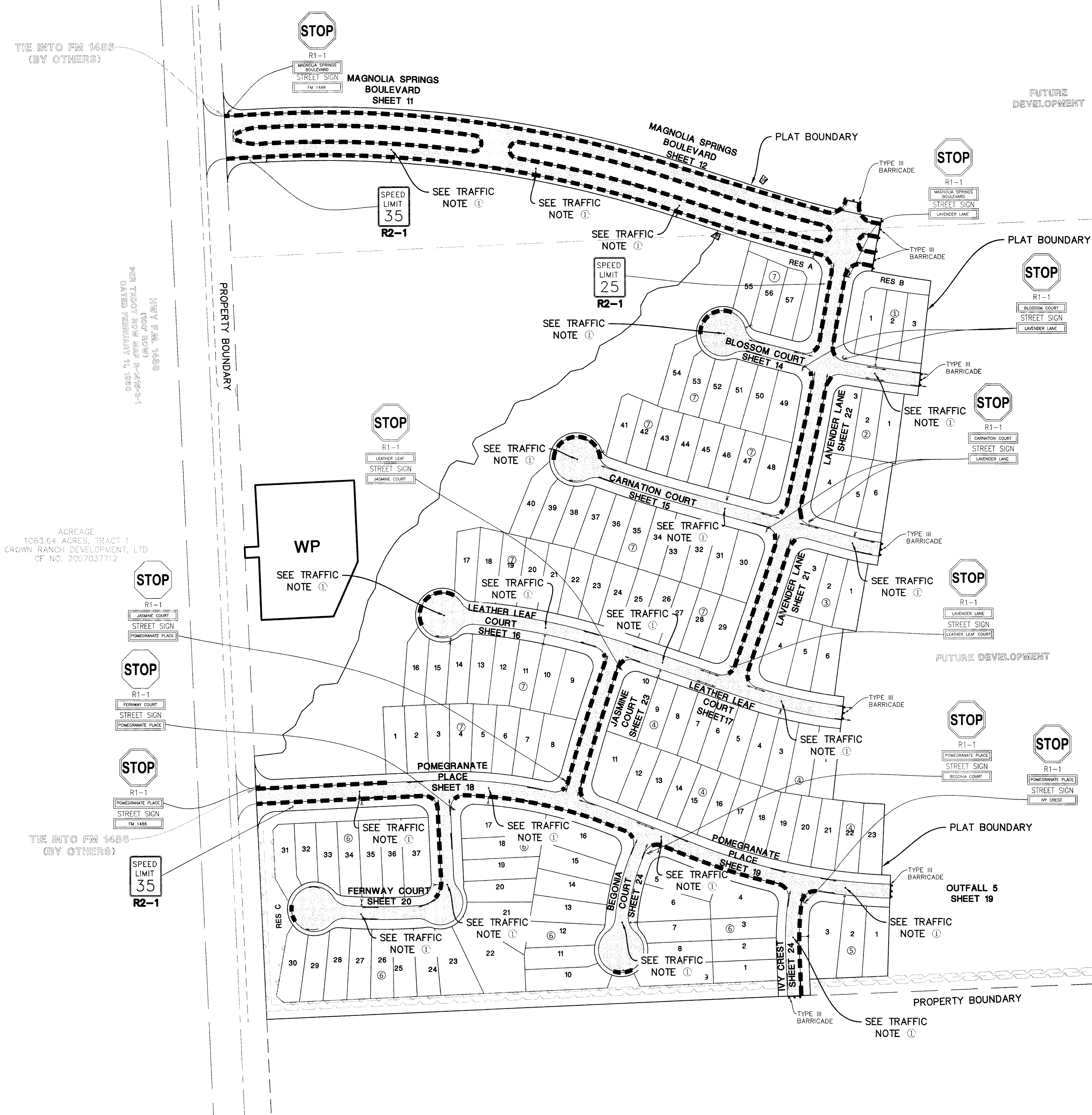


FRONT VIEW  
TYPE III BARRICADE FOR END OF ROAD

FOR TYPE III BARRICADE FOR END OF ROAD, THE THREE (3) RAILS SHALL BE REFLECTIVE RED AND REFLECTIVE WHITE STRIPES ON SIDE FACING TRAFFIC



TYPICAL SIGN MOUNT DETAILS



TIE INTO FM 1488 (BY OTHERS)

ACREAGE  
 1063.64 ACRES, TRACT 1  
 CROWN RANCH DEVELOPMENT, LTD  
 CF NO. 2007037712

TIE INTO FM 1488 (BY OTHERS)

6/24/2021 8:54:57 PM P:\610.056 Magnolia Crossing\006 Sec.1 - MS&D\Map\Plan Set Drawings\MAGNOLIA CROSSING 006 SEC. 1 - MS&D\TRAFFIC SIGNAGE AND PAVEMENT MARKINGS.dwg