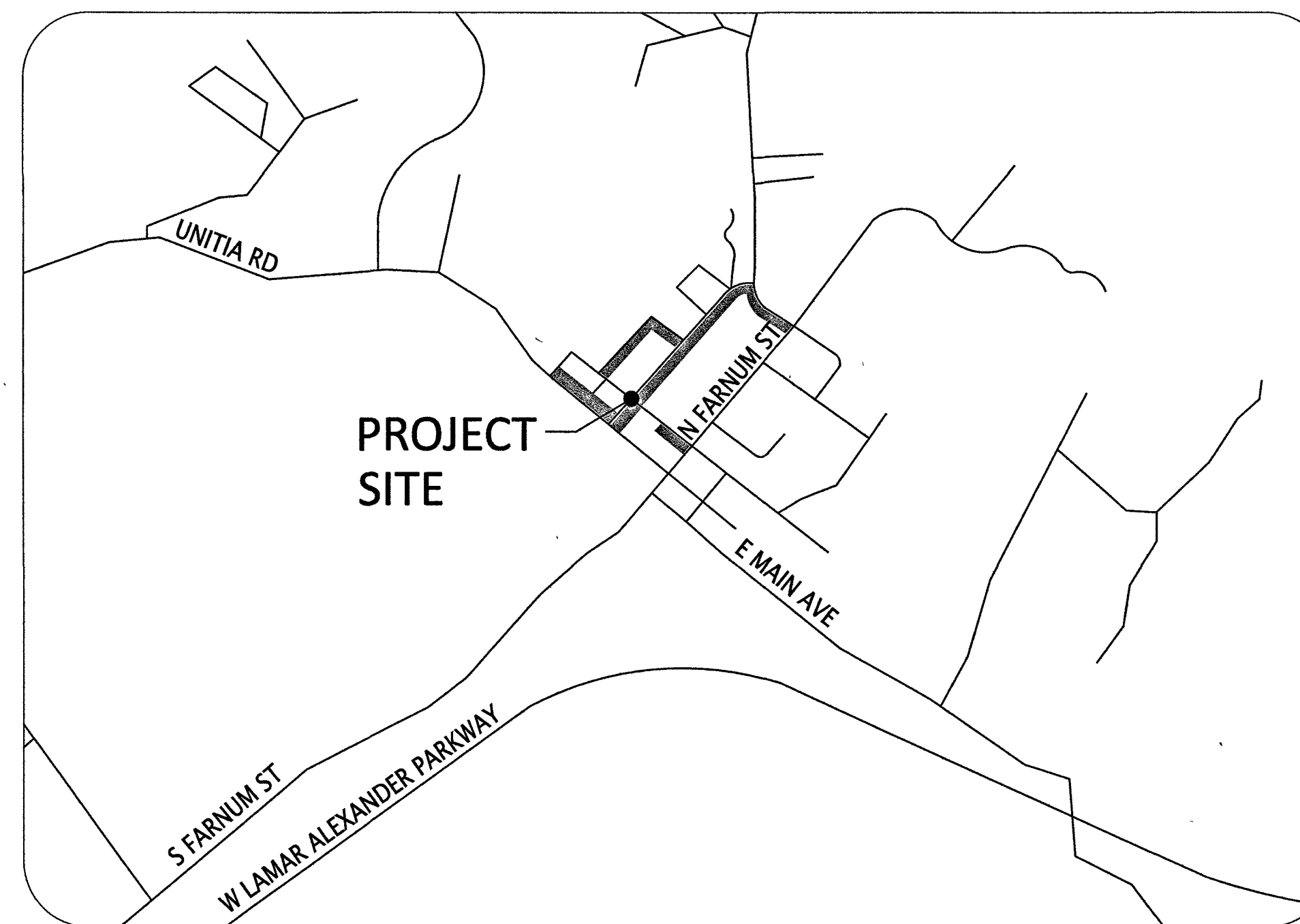


# CITY OF FRIENDSVILLE BLOUNT COUNTY, TENNESSEE

2022 HUD PROJECT NUMBER B-22-CP-TN-0853

## 2022 SPECIAL APPROPRIATION FUNDS FOR CITY OF FRIENDSVILLE SECOND CONGRESSIONAL DISTRICT - US REPRESENTATIVE TIM BURCHETT FOR DOWNTOWN SIDEWALK IMPROVEMENTS



**LOCATION MAP**

(NOT TO SCALE)

### CITY OF FRIENDSVILLE ADMINISTRATION

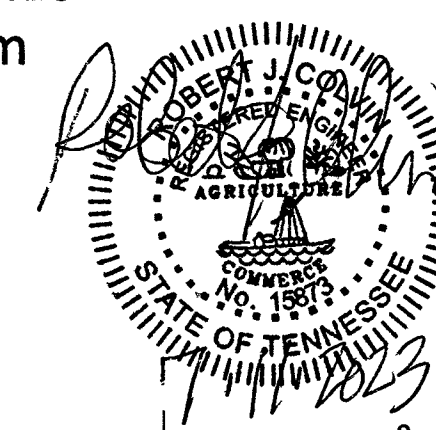
MAYOR, STEVEN CARDWELL  
VICE MAYOR, SANDRA BELL  
COMMISSIONER, SHANE ROGERS  
COMMISSIONER, JONATHAN NEWBERRY  
COMMISSIONER, MARGARET MAZE

EXECUTIVE ASSISTANT, KIM ROGERS  
DISTRIBUTION TECHNICIAN, CHRIS BROUWER

FOR:  
CITY OF FRIENDSVILLE  
213 W. COLLEGE AVENUE  
FRIENDSVILLE, TN 37737  
PHONE: (865) 995-2831



2160 Lakeside Centre Way, Suite 201  
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### DRAWING INDEX

SHEET NO.	REV. NO.	ISSUE DATE	TITLE
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C2	0	07/10/23	OVERALL MAP
C3	0	07/10/23	SITE LAYOUT PLAN
C3A	0	07/10/23	GRADING, DRAINAGE, UTILITIES, AND EROSION PREVENTION AND SEDIMENT CONTROL PLAN
C4	0	07/10/23	SITE LAYOUT PLAN
C4A	0	07/10/23	GRADING, DRAINAGE, AND EROSION PREVENTION AND SEDIMENT CONTROL PLAN
C5	0	07/10/23	SITE LAYOUT PLAN
C5A	0	07/10/23	GRADING, DRAINAGE, UTILITIES, AND EROSION PREVENTION AND SEDIMENT CONTROL PLAN
C6	0	07/10/23	SITE LAYOUT PLAN
C6A	0	07/10/23	GRADING, DRAINAGE, AND EROSION PREVENTION AND SEDIMENT CONTROL PLAN
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C8	0	07/10/23	SITE LAYOUT PLAN
C8A	0	07/10/23	GRADING, DRAINAGE, UTILITIES, AND EROSION PREVENTION AND SEDIMENT CONTROL PLAN
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C10	0	07/10/23	DETAILS
C11	0	07/10/23	DETAILS

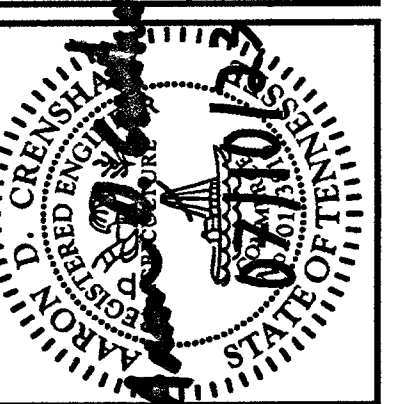


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CITY OF FRIENDSVILLE  
DOWNTOWN SIDEWALK IMPROVEMENTS

COVER SHEET



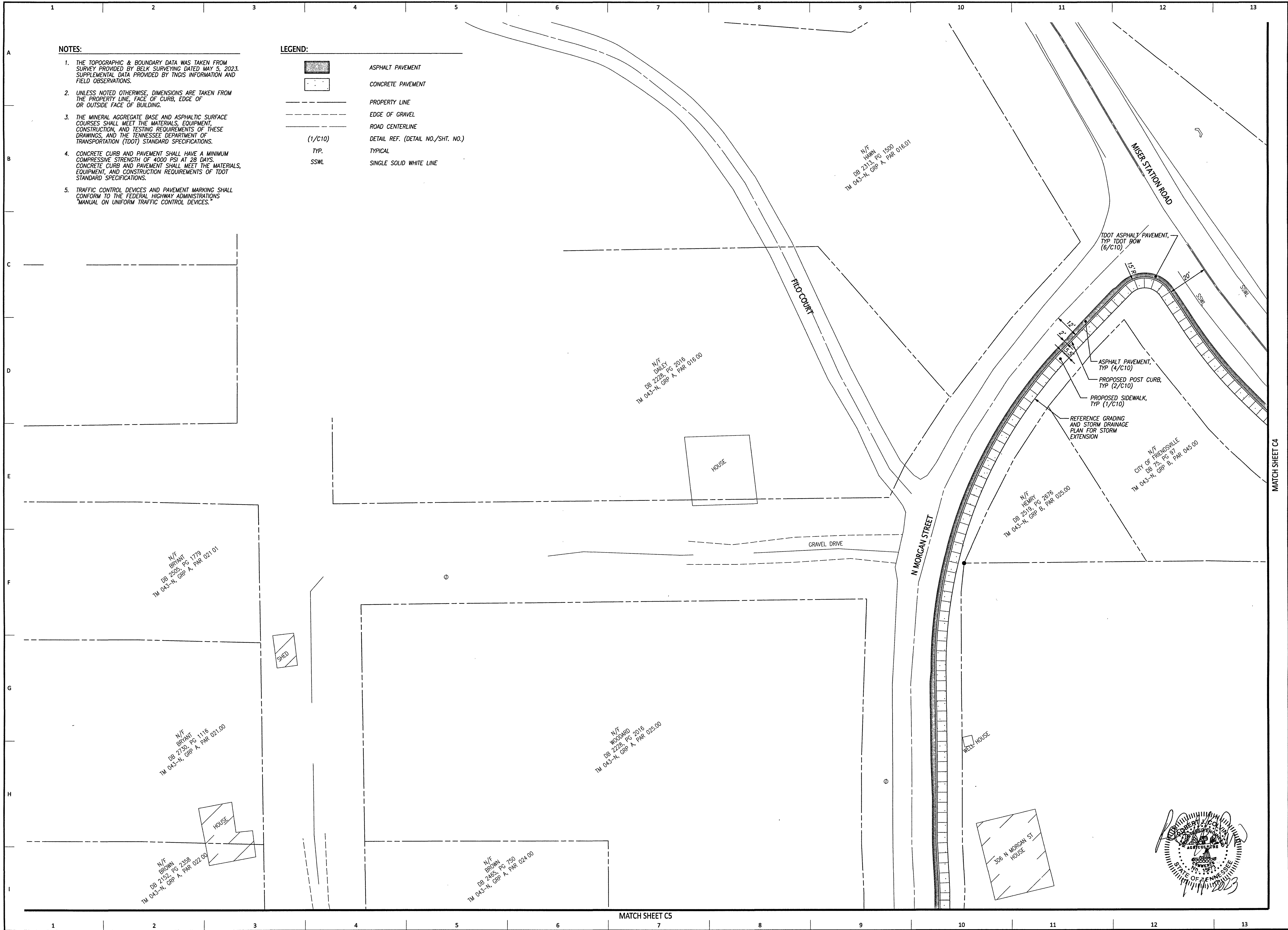
JOB NO: 751.001  
DATE: 07/10/2023

C1





File Name: J:\751\751.001\DWG\751001c03.dgn  
Plot Date: 7/10/2023



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SCALE: FEET

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NO.	DATE	ISSUED FOR CONSTRUCTION	REVISION	BY
0	07/10/23			

**CITY OF FRIENDSVILLE**  
DOWNTOWN SIDEWALK IMPROVEMENTS

**SITE LAYOUT PLAN**

JOB NO: 751.001  
DATE: 07/10/2023

**C3**

File Name: J:\751\751.001\DWG\7510016003A.dgn  
Plot Date: 7/10/2023

#### GRADING NOTES:

- UNLESS NOTED OTHERWISE, THE PROPOSED GRADES SHOWN ON THESE DRAWINGS ARE FINISHED GRADE, EXISTING AND PROPOSED CONTOURS ARE SHOWN AT 1'-FT. INTERVALS.
- THE ACCURACY OF THE GRADES IS DEPENDANT ON THE DATA PROVIDED BY THE OWNER OR OWNER'S REPRESENTATIVE. FIELD VERIFY AS NECESSARY PRIOR TO CONSTRUCTION.
- THE SITE SHALL BE CLEARED AND GRUBBED WITHIN THE LIMITS OF EXCAVATION. COMPLETELY DISPOSE OF ALL MATERIALS RESULTING FROM CLEARING AND GRUBBING OFF-SITE. BURNING SHALL NOT BE PERMITTED UNLESS PRIOR APPROVAL IS OBTAINED BY THE LOCAL FIRE DEPARTMENT. THE CONTRACTOR MUST OBTAIN A PERMIT AND MEET ALL OF THE REQUIREMENTS AS SPECIFIED BY THE FIRE DEPARTMENT.
- ALL TREES STUMPS, BOULDERS, AND OTHER OBSTRUCTIONS SHALL BE REMOVED TO A DEPTH OF 2 FT BELOW THE SUBGRADE. ROCK SHALL BE SCARIFIED TO DEPTH OF 1 FT BELOW SUBGRADE.
- STRIP TOPSOIL FULL DEPTH (6-IN. MIN.) AND TEMPORARILY STOCKPILE EXCAVATED MATERIALS. INSTALL SILT FENCE OR OTHER APPROPRIATE EROSION CONTROL STRUCTURES ON THE DOWN HILL SIDE OF THE STOCKPILE.
- PROOF ROLL ALL AREAS TO RECEIVE FILL. PROOF ROLL WITH A FULLY LOADED TANDEM AXLE DUMP TRUCK USING A CRISS-CROSS PATTERN (4 PASSES MIN.) AREAS FAILING THE PROOF ROLLING SHALL BE UNDERCUT AND BACKFILLED USING AN ENGINEERED FILL OR STABILIZED BY A METHOD APPROVED BY THE PROJECT GEOTECHNICAL ENGINEER.
- AREAS THAT EXHIBIT WEAK SOIL OR OTHERWISE UNSUITABLE CONDITIONS SHALL BE UNDERCUT TO A FIRM LEVEL OF SOIL FOLLOWED BY BACKFILLING THE UNDERCUT AREAS USING AN ENGINEERED FILL. TDOT NO. 57, OR TDOT NO. 67 STONE.
- FILL MATERIAL SHALL BE SATISFACTORY MATERIAL FREE FROM ROOTS AND OTHER ORGANIC MATERIAL, FROZEN MATERIAL, AND TRASH. FILL MATERIAL SHALL NOT BE FREE OF STONE OR OTHER MATERIAL LARGER THAN 6 IN. AND LARGER THAN 4 IN. IN THE TOP 6 IN. OF AN EMBANKMENT.
- FILL SOILS SHALL HAVE A PI LESS THAN 30 & A MAXIMUM DRY DENSITY OF 90 PCF OR GREATER.
- UNSATISFACTORY SOILS INCLUDE MATERIALS THAT ARE TOO WET OR TOO SOFT, EXPANSIVE SOILS AND SOILS CLASSIFIED PT. OH, AND OL. LEGALLY DISPOSE OF UNSATISFACTORY SOILS OFF-SITE UNLESS OTHERWISE APPROVED BY THE OWNER OR GEOTECHNICAL ENGINEER.
- FILL MATERIAL SHALL BE PLACED IN LOOSE, HORIZONTAL LIFTS NOT EXCEEDING 8 IN. THICKNESS. UNLESS NOTED OTHERWISE, COMPACT EACH LAYER TO AT LEAST 98% MAXIMUM DRY DENSITY. COMPACT THE UPPER 24 IN. OF FILL BENEATH PAVEMENTS AND THE UPPER 12 IN. BENEATH BUILDING SLABS TO 100% MAXIMUM DRY DENSITY. MAINTAIN THE MOISTURE CONTENT TO WITHIN -1 TO +3 PERCENT OF THE OPTIMUM MOISTURE CONTENT.
- A 6 IN. (MIN.) LAYER OF TOPSOIL SHALL BE PLACED OVER THE AREAS TO BE SEED AND TO THE FINISH GRADE ELEVATIONS AS SHOWN ON THE DRAWINGS.
- DO NOT ALLOW WATER TO ACCUMULATE IN EXCAVATIONS OR POND ON-SITE. PROVIDE NECESSARY MEASURES TO KEEP THE SITE FREE-DRAINING.
- PROTECT AND MAINTAIN SUBGRADES UNTIL PLACEMENT OF THE FINAL SURFACE IS ACHIEVED.
- VERIFY GRADES WHEREVER NECESSARY TO BRING THE PROPOSED LINES, ELEVATIONS, SLOPES, AND CROSS-SECTIONS OF THE GRADING WORK TO WITHIN THE FOLLOWING TOLERANCES ABOVE OR BELOW THAT AS SHOWN ON THE PLANS: SUBGRADE 0.1", UNPAVED AREAS 0.1", SIDEWALKS 0.10", AND PAVEMENTS 0.04".
- DISTURBED AREAS SHALL BE STABILIZED IN AN EXPEDIENT MANNER TO MINIMIZE TIME OF EXPOSURE TO WEATHER.

#### STORM PIPE NOTES:

- INSTALL STORM SEWER PIPING AND APPURTENANCES TO MEET THE MATERIALS, EQUIPMENT, AND CONSTRUCTION REQUIREMENTS OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION (TDOT) STANDARD SPECIFICATIONS.
- TRENCH DESIGN AND SAFETY FOR PIPELINE CONSTRUCTION IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL CONFORM WITH ALL APPLICABLE LOCAL, STATE, AND OSHA REGULATIONS.
- UNLESS NOTED OTHERWISE, STORM SEWER PIPE SHALL BE CLASS III REINFORCED CONCRETE PIPE (RCP). RCP SHALL BE INSTALLED IN ACCORDANCE WITH ASHTO M170 (ASTM C76).
- PIPE DEFLECTION AND ALIGNMENT SHALL BE CHECKED AFTER BACKFILLING AND COMPACTION ARE COMPLETE AND PRIOR TO PLACING THE BASE. TEST DEFLECTION WITH A MANDREL OR OTHER APPROVED METHOD.
- PIPE WITH DEFLECTION 5% OR GREATER OR WITH UNDUE MISALIGNMENT SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
- PIPE/CULVERTS ARE MEASURED IN TERMS OF HORIZONTAL LENGTH COMPLETE IN PLACE REGARDLESS OF TYPE, DEPTH, CLASS, SHAPE AND SIZE, AS MEASURED ALONG THE CENTERLINE FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE (NO DEDUCTIONS FOR STRUCTURES). ACTUAL QUANTITY OF PIPE MAY VARY. THE CONTRACTOR SHALL SUPPLY AND INSTALL THE NECESSARY QUANTITY OF PIPE TO CONSTRUCT THE COMPLETE SYSTEM AS SHOWN. INSTALLATION INCLUDES EXCAVATION, SHORING, FURNISHING AND INSTALLATION OF PIPES, JOINT MATERIALS, COUPLINGS, AND BACKFILL.
- FOR RCP PIPE WITH SLOPES GREATER THAN 15% USE JOINT TIES OR JOINT FASTENERS AS SPECIFIED BY THE MANUFACTURER.
- PRIOR TO INSTALLING NEW PIPING, CONTRACTOR SHALL LOCATE EXISTING UTILITIES/STRUCTURES WHERE NEW PIPES CROSS BY POT-HOLING. AFTER EXPOSING EXISTING UTILITY/STRUCTURE, CONTRACTOR SHALL OBTAIN HORIZONTAL AND VERTICAL LOCATIONS BY FIELD SURVEY AND RESOLVE ANY CONFLICTS BETWEEN UNDERGROUND UTILITIES/STRUCTURES AND NEW PIPING UNDER THE DIRECTION OF THE OWNER PRIOR TO INSTALLING NEW PIPING.

#### EPSC NOTES:

- EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) DEVICES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE TDEC'S EROSION AND SEDIMENT CONTROL HANDBOOK AND TDEC'S CONSTRUCTION ACTIVITY PERMIT REQUIREMENTS. THE DEVICES SHOWN ON THE DRAWINGS ARE THE MINIMUM REQUIRED. THE CONTRACTOR SHALL PROVIDE ADDITIONAL EROSION CONTROL DEVICES AS NEEDED.
- INSTALL TEMPORARY SEDIMENT TRAP(S) WHERE SHOWN OR AS OTHERWISE APPROPRIATE. CONSTRUCT AND MAINTAIN IN ACCORDANCE WITH THE REQUIREMENTS OF TDEC'S EROSION & SEDIMENT CONTROL HANDBOOK. MUDDY WATER COLLECTED IN SEDIMENT TRAP(S) SHALL BE HELD UNTIL IT IS AT LEAST AS CLEAR AS UPSTREAM WATER BEFORE IT IS DISCHARGED TO SURFACE WATERS. DISCHARGE THROUGH A PIPE OR LINED CHANNEL SO THAT THE DISCHARGE DOES NOT CAUSE EROSION & SEDIMENTATION.
- INSTALL TEMPORARY DIVERSION BERMS OR DIVERSION CHANNELS AS NECESSARY TO DIVERT STORM WATER FROM RUNNING ONTO THE DISTURBED AREAS AND TO DIVERT RUNOFF FROM DISTURBED AREAS TO THE TEMPORARY SEDIMENT TRAP(S).
- APPLY TEMPORARY SEEDING WHENEVER GRADING OPERATIONS ARE TEMPORARILY HALTED FOR OVER 14 DAYS AND FINAL GRADING OF EXPOSED SURFACES IS TO BE COMPLETED WITHIN ONE YEAR. APPLY TEMPORARY SEEDING TO SOIL STOCKPILES.
- APPLY PERMANENT SEEDING WHENEVER GRADING OPERATIONS ARE COMPLETED AND ALL CONSTRUCTION OPERATIONS WILL NOT IMPACT THE DISTURBED AREA. APPLY PERMANENT SEEDING TO ALL NON-CONSTRUCTION AREAS, WHICH SHOW SIGNS OF EXCESSIVE EROSION.
- UNLESS NOTED OTHERWISE, PERMANENT SEEDING SHALL BE FESCUE (TALL TURF-TYPE, CHEWINGS, OR CREEPING RED) AND SHALL BE FRESH CLEAN AND OF NEW CROP SEED. SEED AT A RATE OF 8 LBS./1000 S.F. USE A SLOW RELEASE STARTER FERTILIZER AT 1 LB. NITROGEN PER 1,000 S.F. WITH LINE AT A RATE OF 50 LBS. PER 1,000 S.F. IF GRADING IS PERFORMED DURING THE WINTER MONTHS. SEED MIXTURE SHALL BE SUPPLEMENTED WITH A WINTER RYE AT A RATE OF 3 LBS PER 1,000 S.F. TO ASSURE STABILIZATION DURING THE WINTER SEASON.
- UNLESS NOTED OTHERWISE, MULCH WITH STRAW AT A RATE OF 100 LBS./1000 S.F. OVER THE SEEDDED AREAS.
- EXCAVATE STORMWATER SEDIMENT PONDS AS FIRST ITEM OF CONSTRUCTION.
- THE CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF SITE CONSTRUCTION POLLUTION PREVENTION CONTROLS THROUGHOUT THE LIFE OF THE PROJECT.
- THIS SITE IS A PRIORITY CONSTRUCTION ACTIVITY PER KNOX COUNTY STORMWATER MANAGEMENT MANUAL, VOLUME 2, CHAPTER 9.
- ADEQUATE DRAINAGE, EROSION AND SEDIMENT CONTROL MEASURES, BEST MANAGEMENT PRACTICES, AND/OR OTHER STORMWATER MANAGEMENT FACILITIES SHALL BE PROVIDED AND MAINTAINED AT ALL TIMES DURING CONSTRUCTION. DAMAGES TO ADJACENT PROPERTY AND/OR THE CONSTRUCTION SITE CAUSED BY THE CONTRACTOR'S FAILURE TO PROVIDE AND MAINTAIN ADEQUATE DRAINAGE, EROSION PREVENTION AND SEDIMENT CONTROL FOR THE CONSTRUCTION AREA SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

#### LEGEND:

---	PROPERTY LINE
—855—	PROPOSED CONTOUR
- - - 855 - - -	EXISTING CONTOUR
850.50 850.00	TOP OF CURB ELEVATION FINISH SURFACE ELEVATION
850.52	PROPOSED SPOT ELEVATION
TW 875.80 BW 874.00	TOP OF WALL/FINISH SURFACE ELEV BOTTOM OF WALL/FINISH SURFACE ELEV
+++++	TEMPORARY SILT FENCE
—ECW—	TEMPORARY EROSION CONTROL WATTLE
□	TEMPORARY INLET PROTECTION
—SD—	PROPOSED STORM DRAIN
■	PROPOSED CATCH BASIN
●	PROPOSED AREA DRAIN
△	PROPOSED HEADWALL
—SD—	EXISTING STORM DRAIN
◆	RELOCATED FIRE HYDRANT
—W—	EXISTING WATER LINE
—G—	EXISTING GAS LINE
(1/C10)	DETAIL REF. (DETAIL NO./SHT. NO.)
TYP.	TYPICAL
SSWL	SINGLE SOLID WHITE LINE

#### UTILITY OWNERS:

##### WATER & SEWER

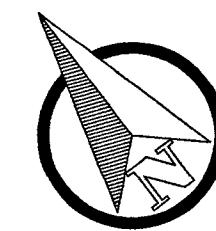
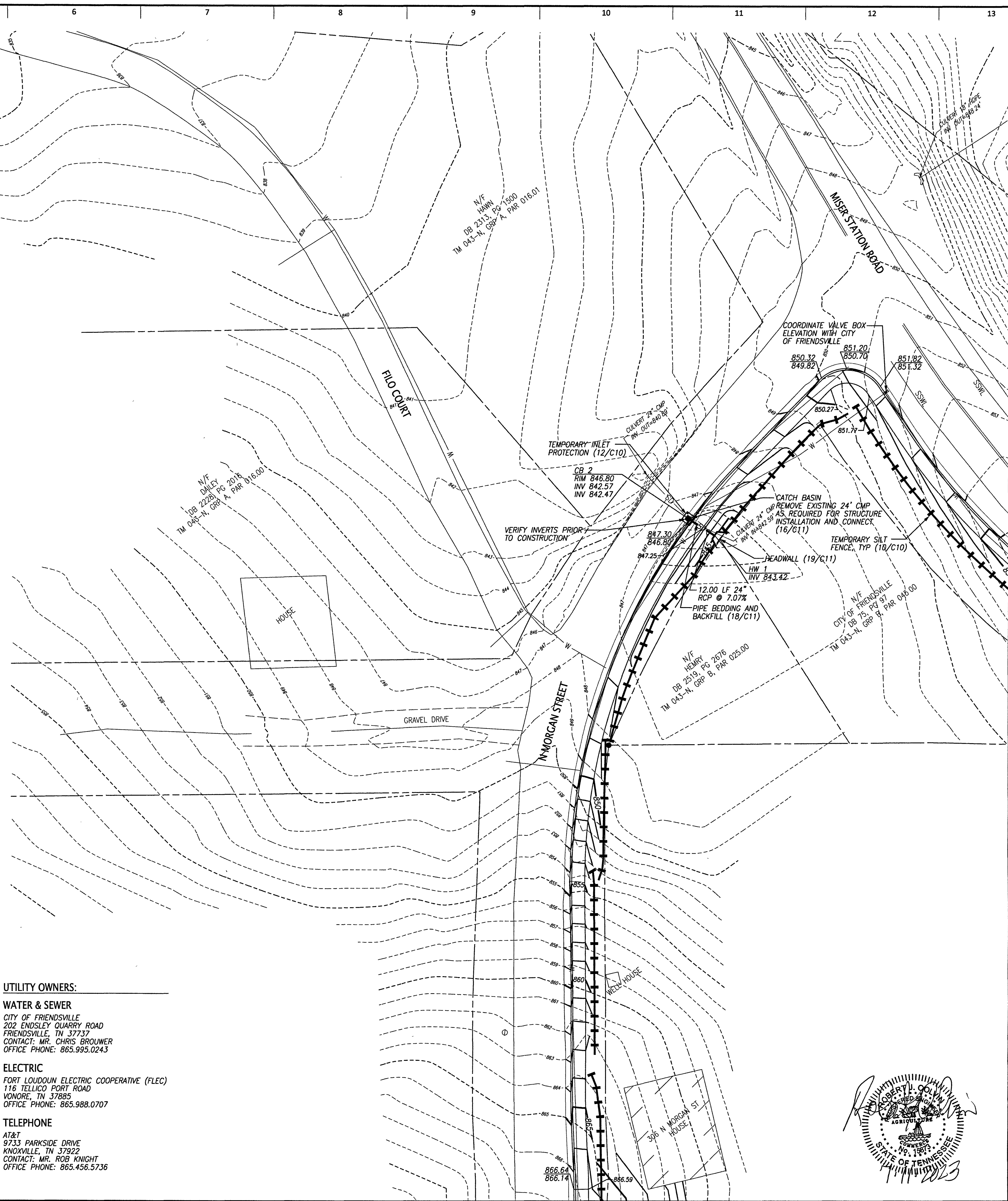
CITY OF FRIENDSVILLE  
202 ENDISLEY QUARRY ROAD  
FRIENDSVILLE, TN 37737  
CONTACT: MR. CHRIS BROUWER  
OFFICE PHONE: 865.995.0243

##### ELECTRIC

FORT LOUDOUN ELECTRIC COOPERATIVE (FLEC)  
116 TELICO PORT ROAD  
VONORE, TN 37885  
OFFICE PHONE: 865.988.0707

##### TELEPHONE

AT&T  
9733 PARKSIDE DRIVE  
KNOXVILLE, TN 37922  
CONTACT: MR. ROB KNIGHT  
OFFICE PHONE: 865.456.5736



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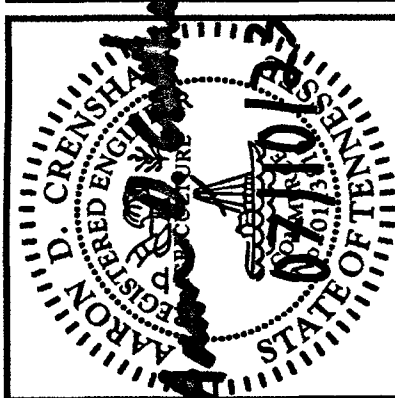
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NO.	DATE	ISSUED FOR CONSTRUCTION	REVISION	ADC	BY
0	07/10/23				

**CITY OF FRIENDSVILLE**  
**DOWNTOWN SIDEWALK IMPROVEMENTS**  
**SITE GRADING, DRAINAGE, UTILITIES, AND**  
**EROSION PREVENTION AND SEDIMENT CONTROL**  
**PLAN**

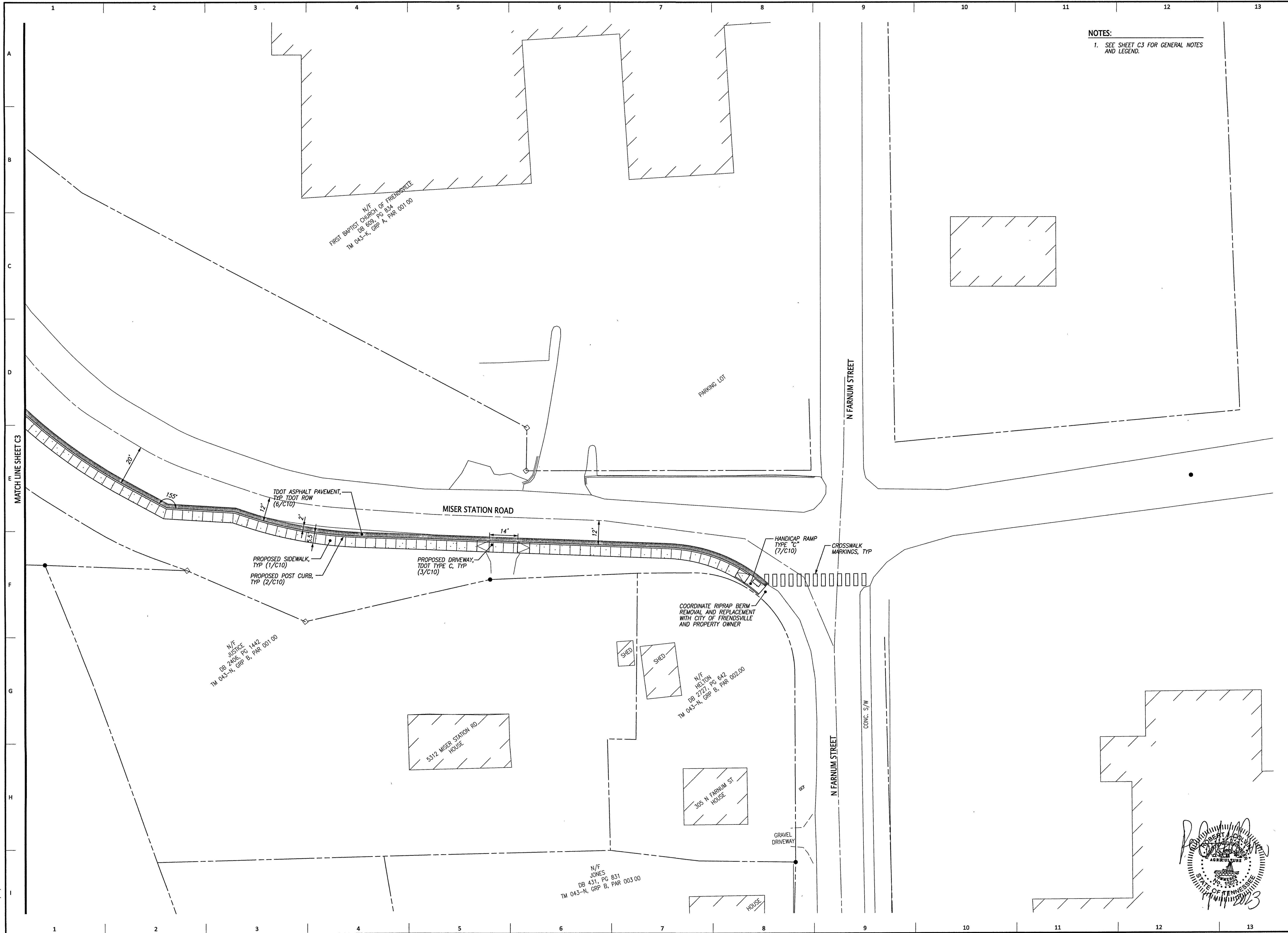


JOB NO: 751.001  
DATE: 07/10/2023

**C3A**



File Name: \\1751\751\001\DWG\751001c04.dgn  
Plot Date: 7/10/2023



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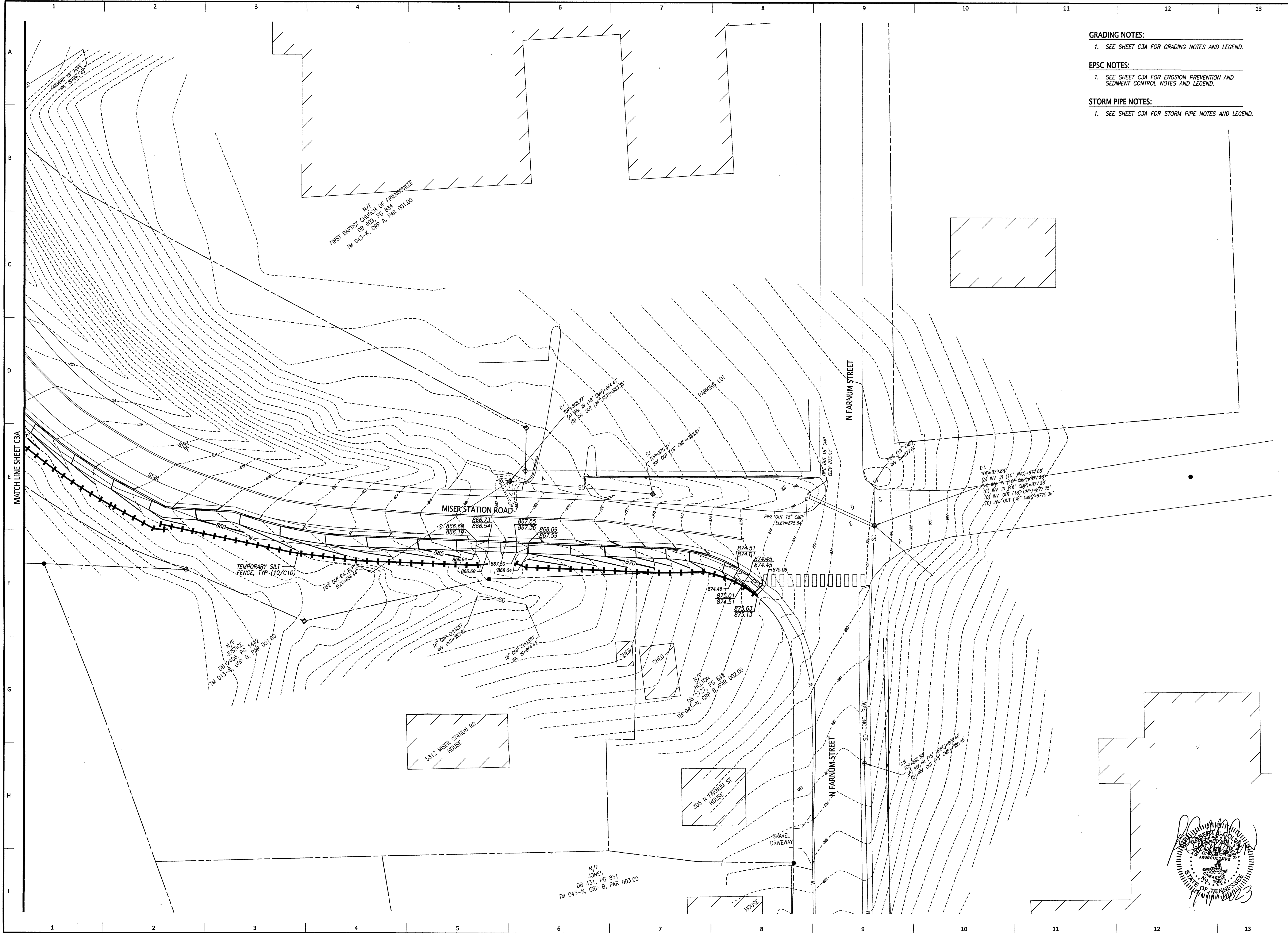
**CITY OF FRIENDSVILLE**  
DOWNTOWN SIDEWALK IMPROVEMENTS

**SITE LAYOUT PLAN**

JOB NO: 751.001  
DATE: 07/10/2023

**C4**

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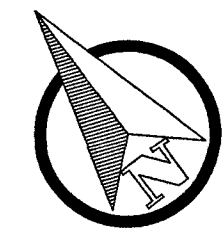
1. SEE SHEET C.3A FOR GRADING NOTES AND LEGEND.

**EPSC NOTES:**

1. SEE SHEET C.3A FOR EROSION PREVENTION AND SEDIMENT CONTROL NOTES AND LEGEND.

**STORM PIPE NOTES:**

1. SEE SHEET C.3A FOR STORM PIPE NOTES AND LEGEND.



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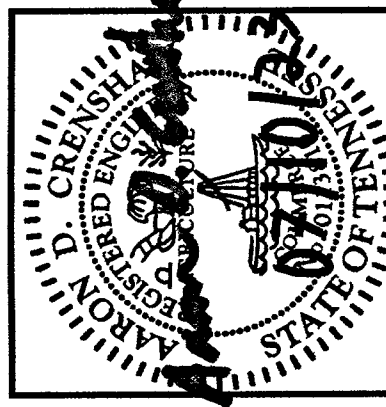
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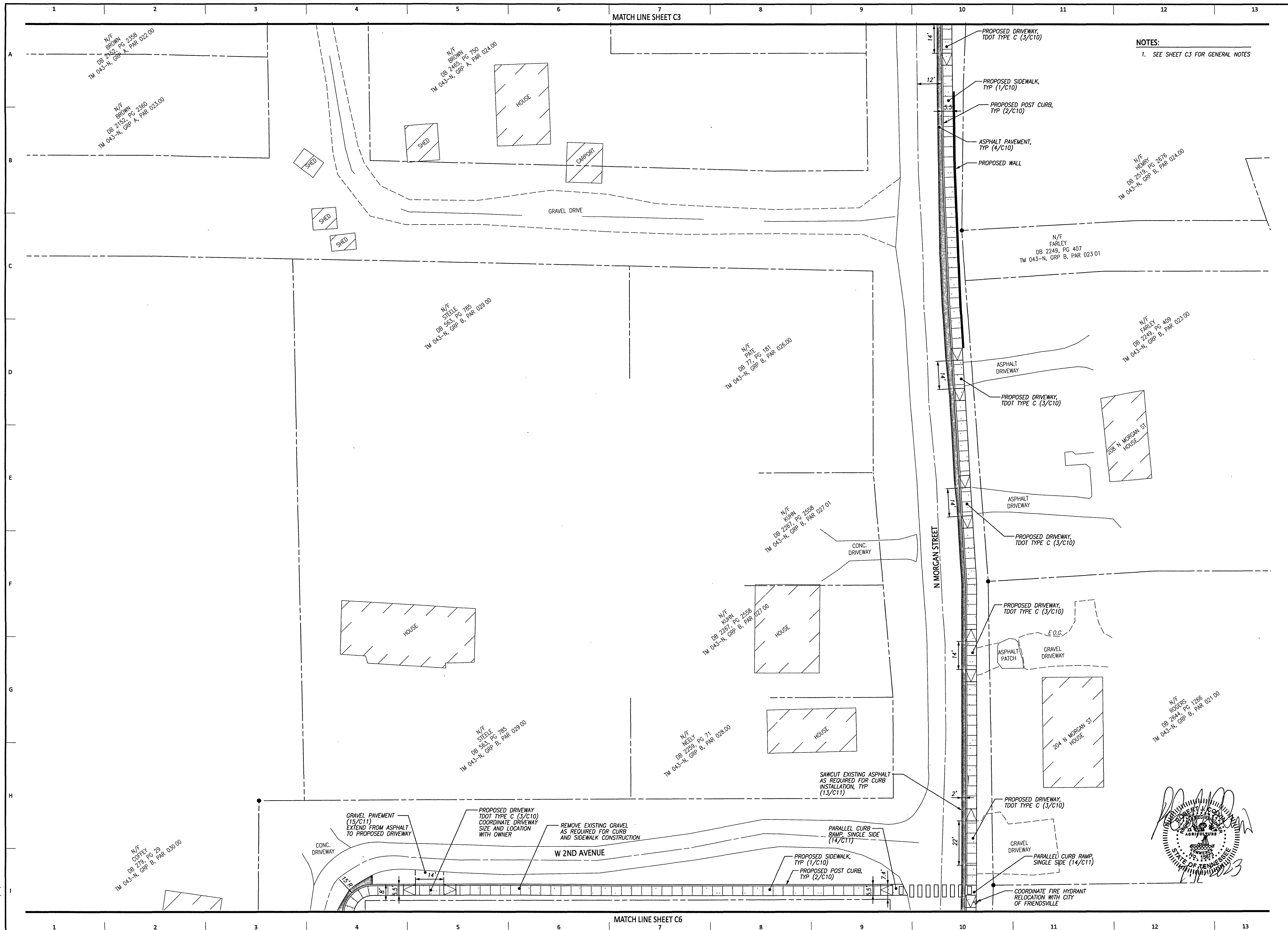
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JOB NO: 751.001  
DATE: 07/10/2023

**C4A**

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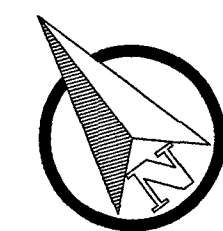
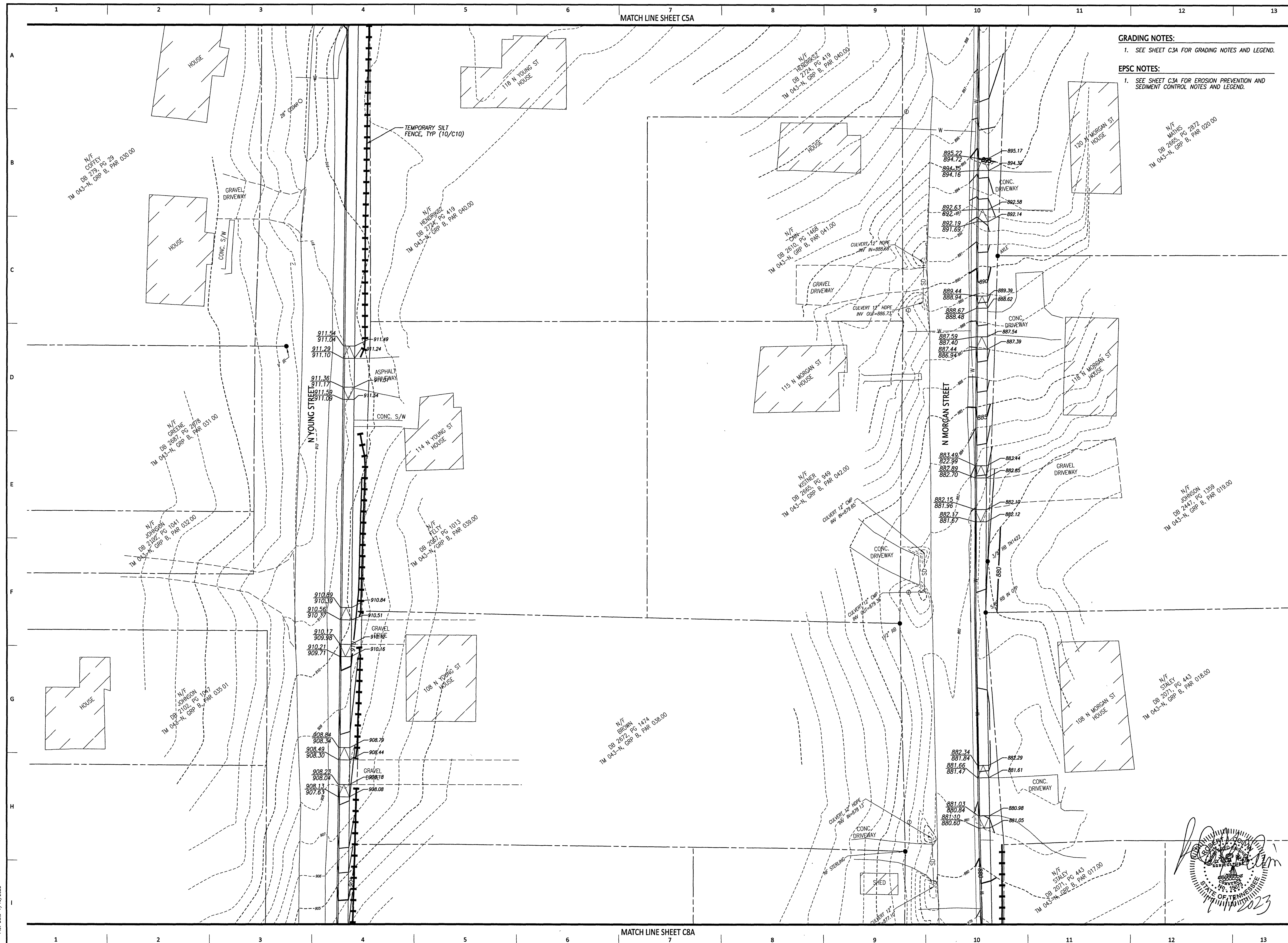












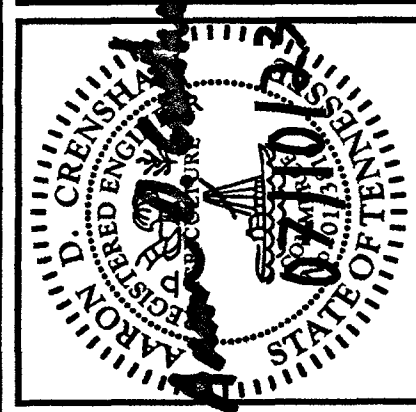
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SITE GRADING, DRAINAGE, AND  
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PLAN**



JOB NO:	751.001
DATE:	07/10/2023

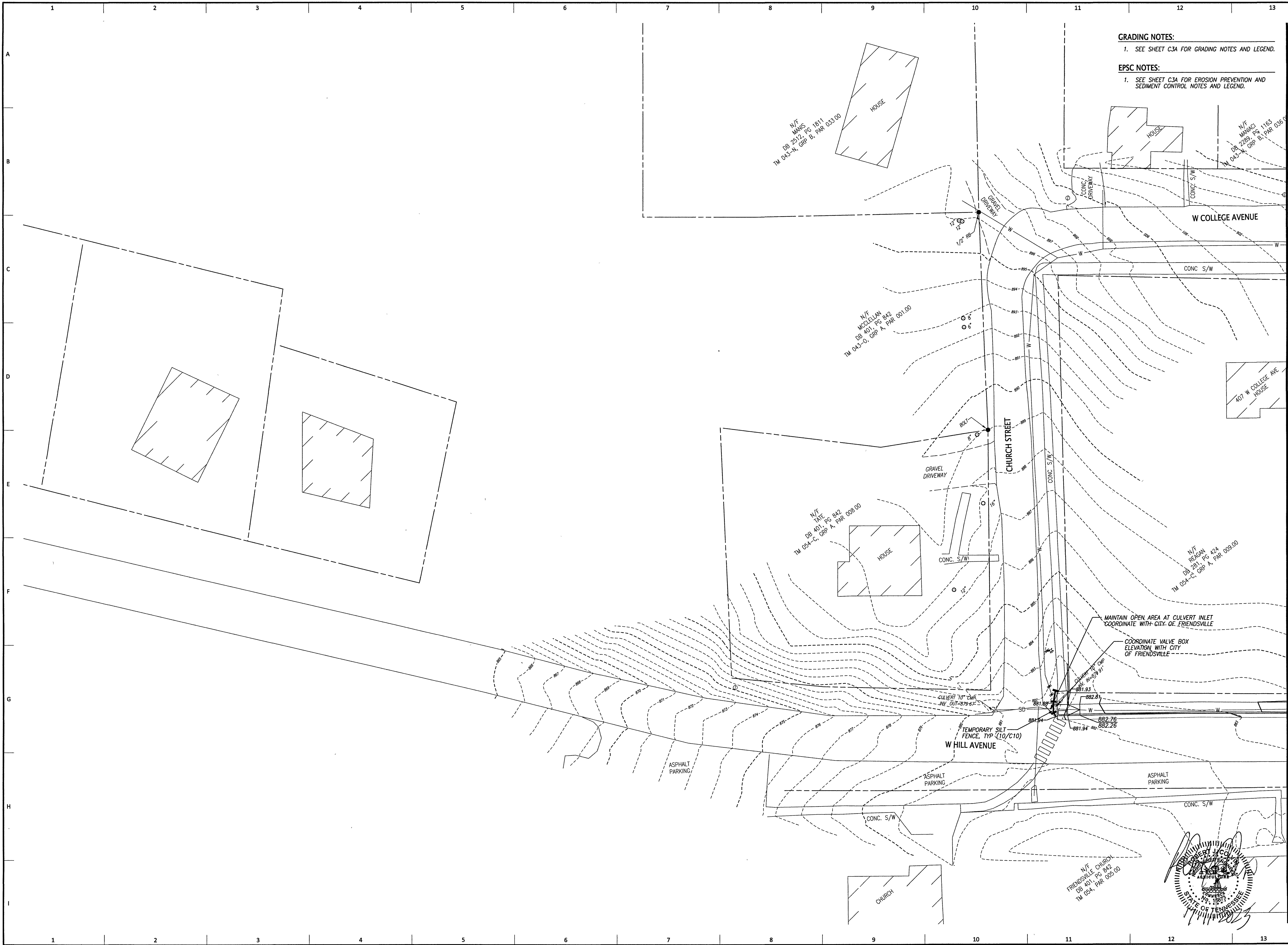
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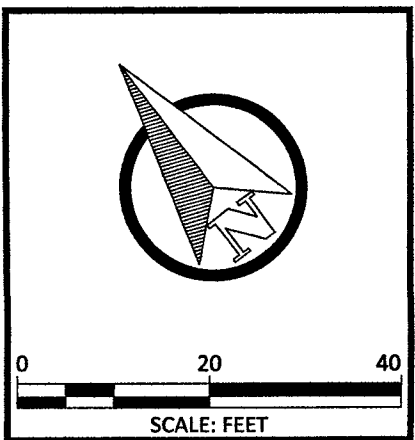


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Plot Date: 7/10/2023



**GRADING NOTES:**  
1. SEE SHEET C.3A FOR GRADING NOTES AND LEGEND.

**EPSC NOTES:**  
1. SEE SHEET C.3A FOR EROSION PREVENTION AND SEDIMENT CONTROL NOTES AND LEGEND.



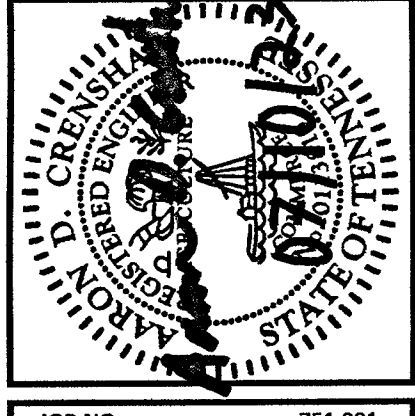
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**PLAN**



JOB NO: 751.001  
DATE: 07/10/2023

**C7A**

MATCH LINE SHEET C8A







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Plot Date: 7/10/2023

MATCH LINE SHEET C6A

MATCH LINE SHEET C7A

MATCH LINE SHEET C9A

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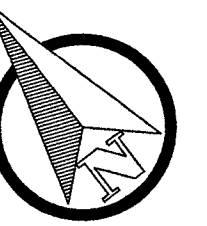
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#### EPSC NOTES:

1. SEE SHEET C3A FOR EROSION PREVENTION AND SEDIMENT CONTROL NOTES AND LEGEND.

#### STORM PIPE NOTES:

1. SEE SHEET C3A FOR STORM PIPE NOTES AND LEGEND.



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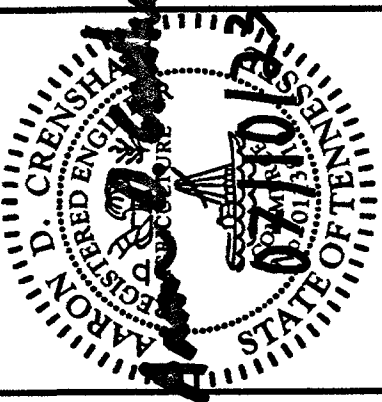
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PHONE: (865) 995-2831  
FAX: (865) 995-9878

NO.	DATE	ISSUED FOR CONSTRUCTION	REVISION	BY
0	07/10/23			ADC

**CITY OF FRIENDSVILLE**  
**DOWNTOWN SIDEWALK IMPROVEMENTS**  
**SITE GRADING, DRAINAGE, UTILITIES, AND**  
**EROSION PREVENTION AND SEDIMENT CONTROL**  
**PLAN**



JOB NO: 751.001  
DATE: 07/10/2023

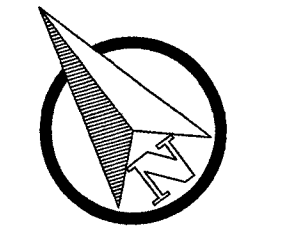
**C8A**



File Name: J:\751\751.001\DWG\751001.dwg  
Plot Date: 7/10/2023



NOTES:  
1. SEE SHEET C3 FOR GENERAL NOTES



0 20 40  
SCALE: FEET



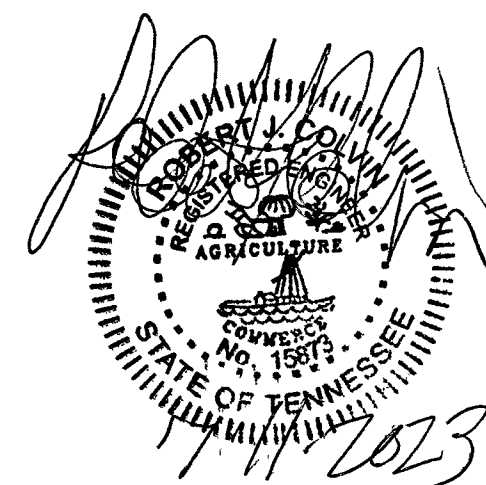
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**CITY OF FRIENDSVILLE**  
**DOWNTOWN SIDEWALK IMPROVEMENTS**  
**SITE LAYOUT PLAN**



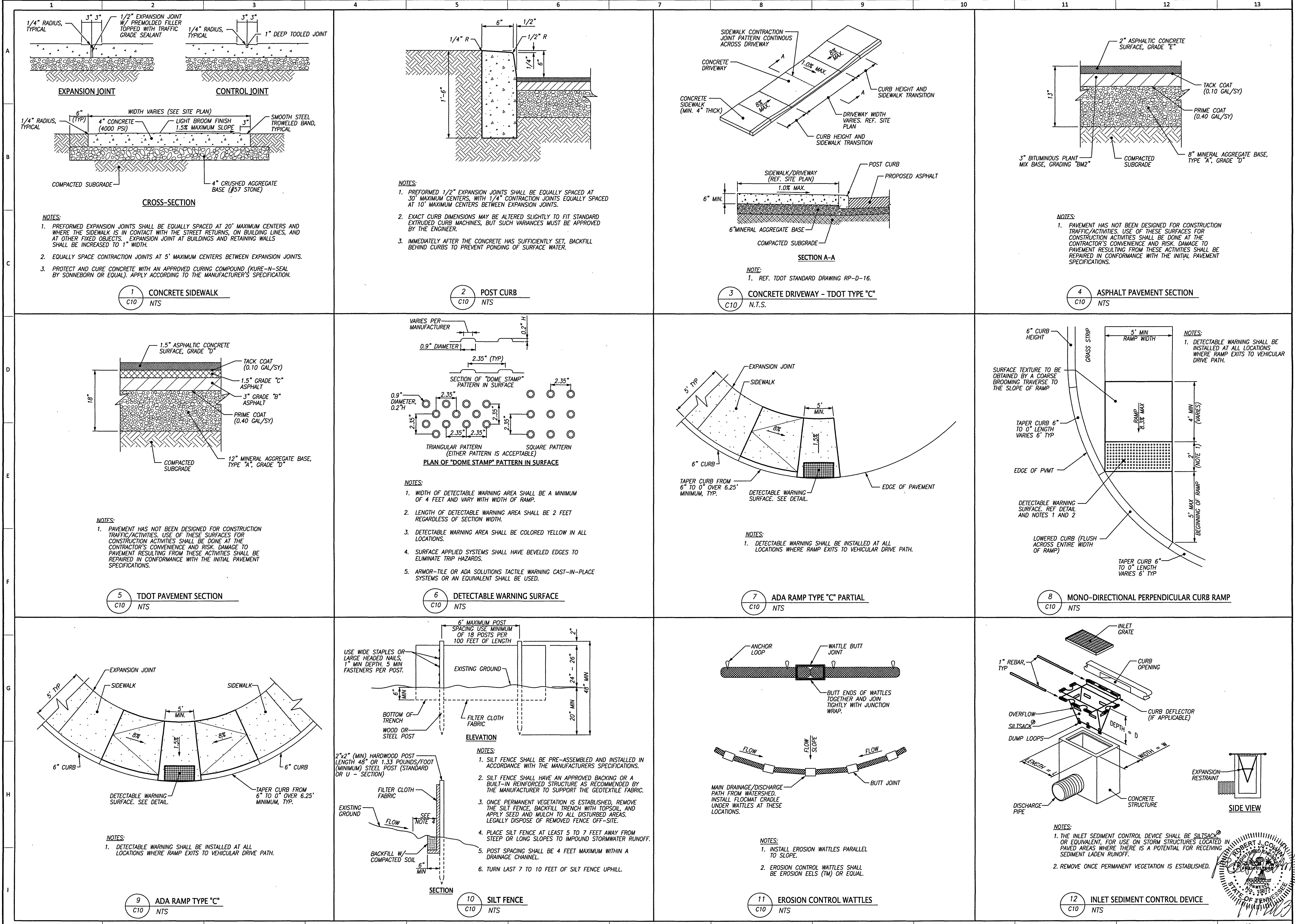
JOB NO: 751.001  
DATE: 07/10/2023

**C9**





File Name: J:\751\751.001\DWG\751001-010.dgn  
Plot Date: 7/10/2023



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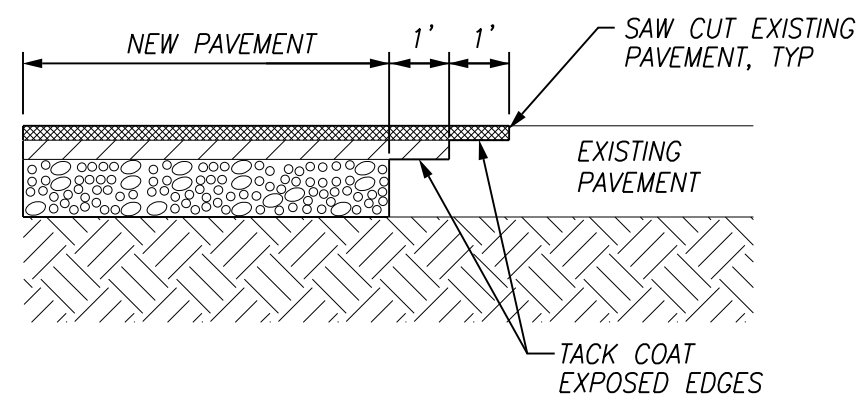
CITY OF FRIENDSVILLE  
DOWNTOWN SIDEWALK IMPROVEMENTS

DETAIL SHEET

ROBERT J. CONWAY  
Professional Engineer  
State of Tennessee  
No. 19873

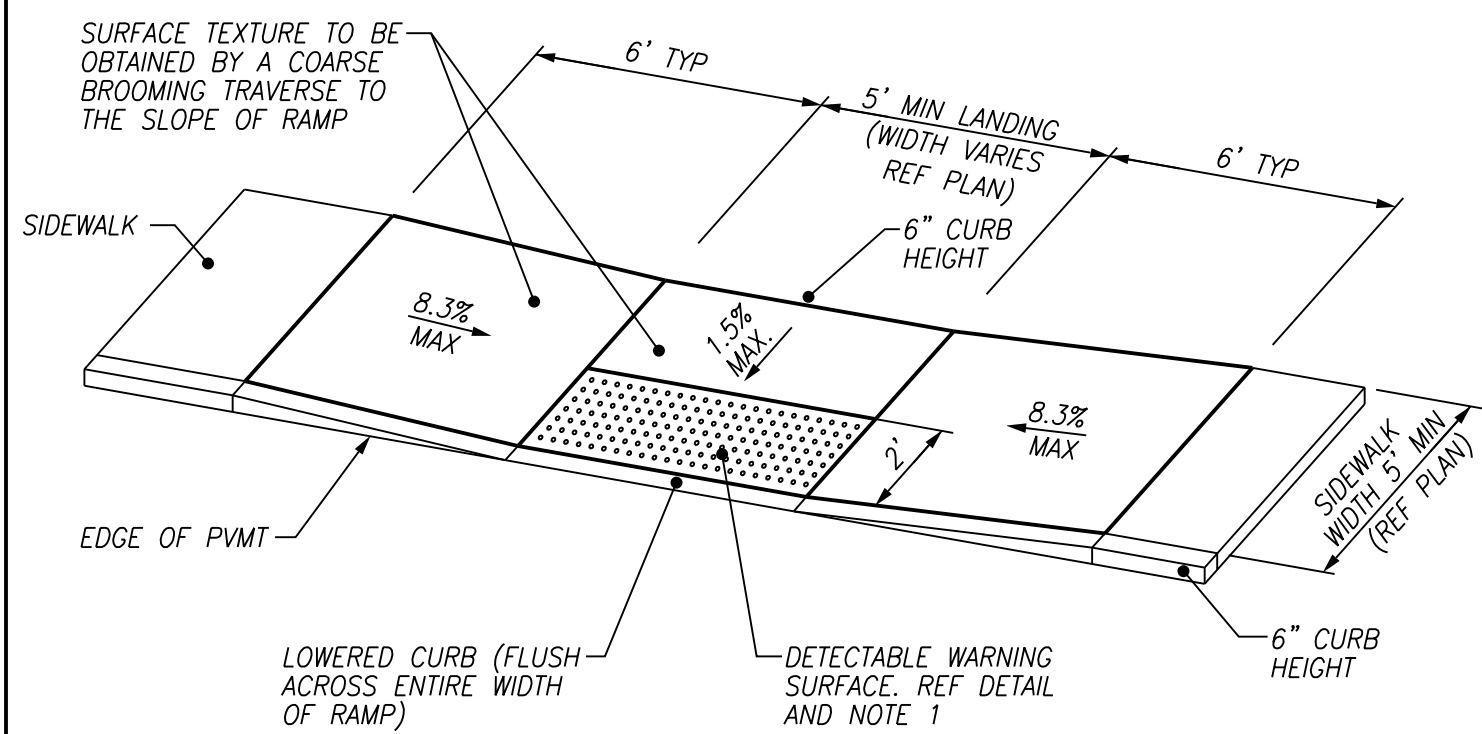
JOB NO: 751.001  
DATE: 07/10/2023

**C10**



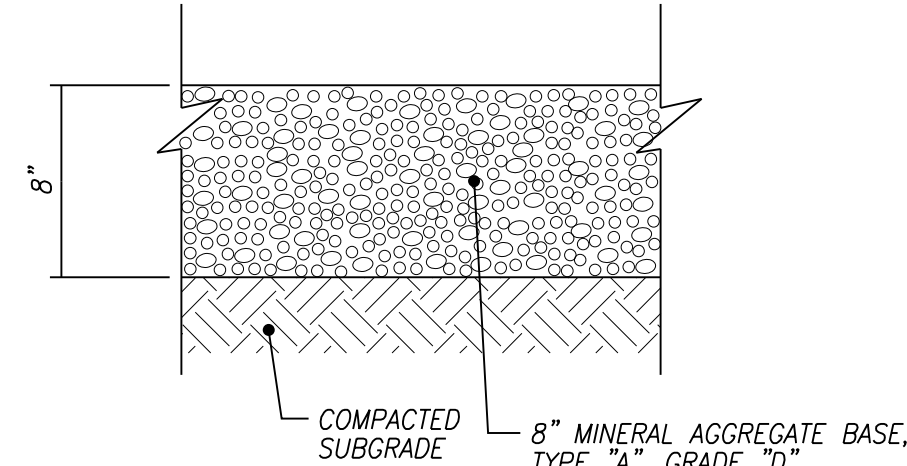
NOTES:  
1. REFERENCE ASPHALT PAVEMENT SECTION DETAIL FOR THICKNESS OF PAVEMENT TO BE REPLACED.

13  
C11  
TYPICAL ASPHALT SAW CUT  
NTS

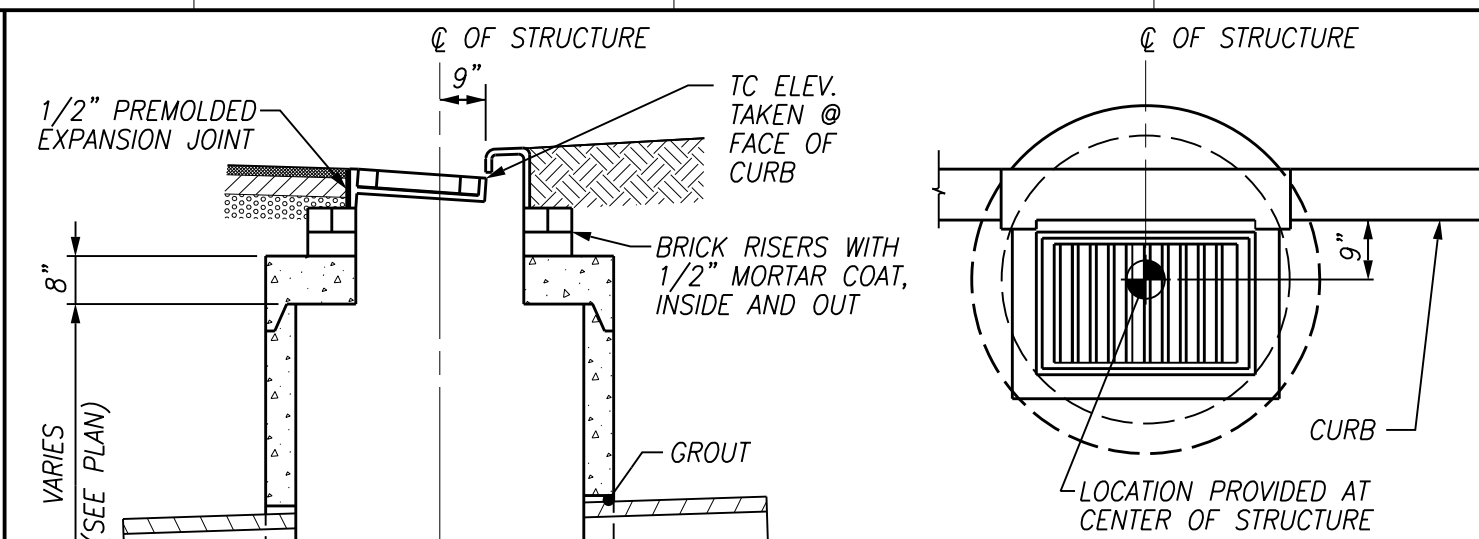


NOTES:  
1. DETECTABLE WARNING SHALL BE INSTALLED AT ALL LOCATIONS WHERE RAMP EXITS TO VEHICULAR DRIVE PATH.

14  
C11  
PARALLEL CURB RAMP  
NTS

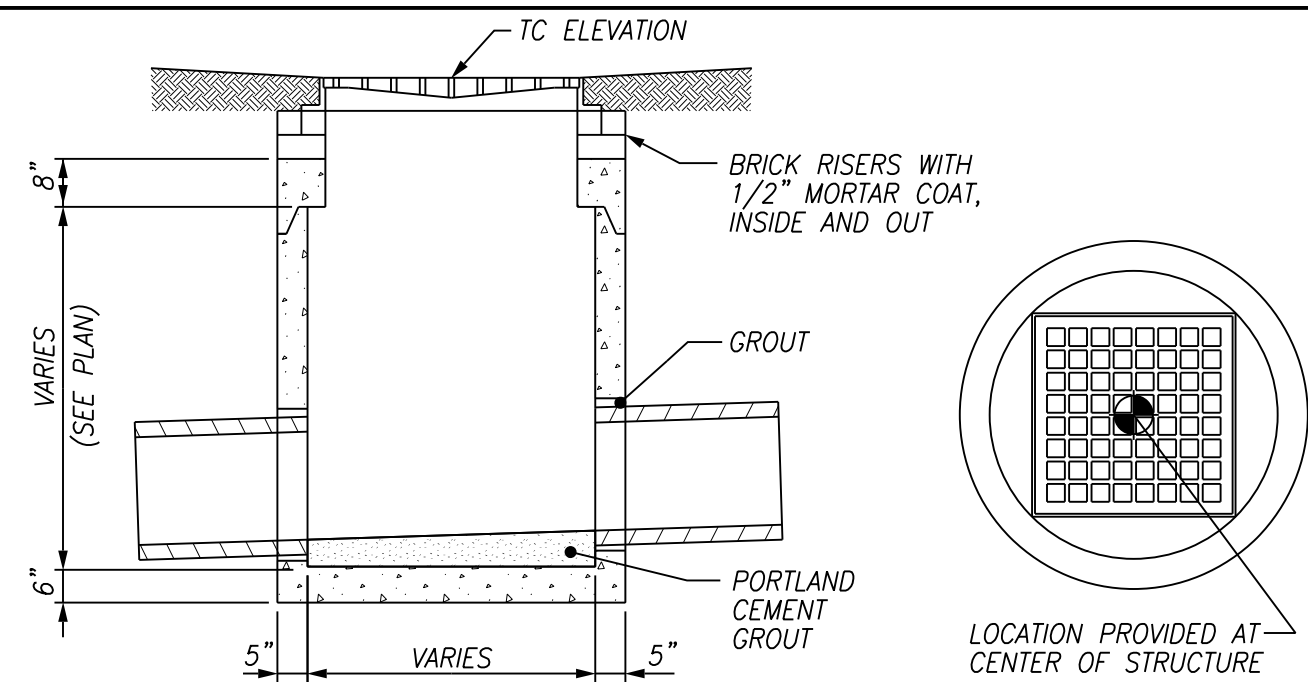


15  
C11  
GRAVEL SECTION  
NTS



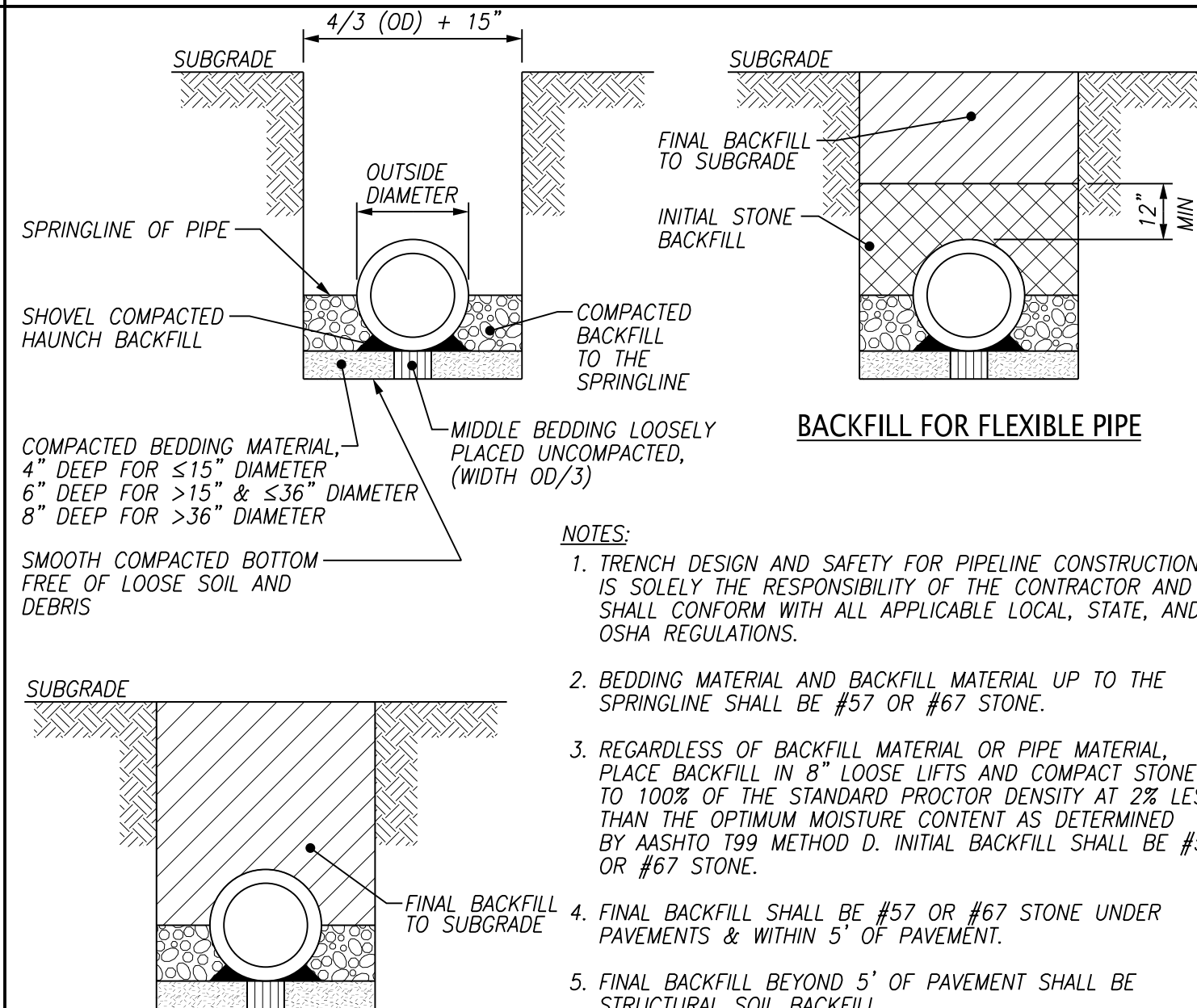
NOTES:  
1. CATCH BASINS SHALL BE CIRCULAR OR SQUARE PRECAST CONCRETE STRUCTURE IN ACCORDANCE WITH ASTM C478 OR C913 (LATEST REVISION). DIMENSIONS VARY DEPENDING ON PIPE SIZE AND ANGLE OF PIPES IN AND OUT OF STRUCTURE. THE OPENING IN THE STRUCTURE TOP SHALL NOT BE LESS THAN THE GRATE DIMENSIONS.  
2. LADDER BARS SHALL BE PROVIDED PER OSHA REGULATIONS.  
3. CATCH BASIN FRAME AND GRATE SHALL BE E.J. USA INC. NO. 7510, TYPE M3, T1 BACK OR EQUAL. THE GRATE AND CURB BACKS SHALL BE STAMPED WITH "DUMP NO WASTE... DRAINS TO WATERWAYS" WITH FISH IMAGE, OR EQUAL.  
4. SHIM THE FRAME TO MATCH THE CROSS SLOPE AND GUTTER LINE SLOPES OF THE PAVEMENT.

16  
C11  
SINGLE CATCH BASIN  
NTS

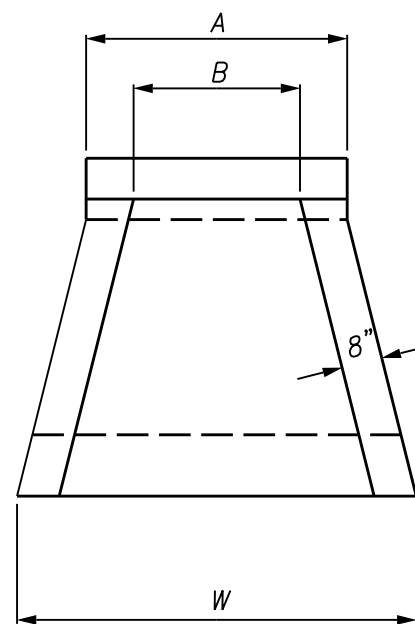


NOTES:  
1. AREA DRAINS SHALL BE CIRCULAR OR SQUARE PRECAST CONCRETE STRUCTURE IN ACCORDANCE WITH ASTM C478 OR C913 (LATEST REVISION). DIMENSIONS VARY DEPENDING ON PIPE SIZE AND ANGLE OF PIPES IN AND OUT OF STRUCTURE. THE OPENING IN THE STRUCTURE TOP SHALL NOT BE LESS THAN THE GRATE DIMENSIONS.  
2. LADDER BARS SHALL BE PROVIDED PER OSHA REGULATIONS.  
3. LOCATION AND TC ELEVATIONS GIVEN AT CENTER OF THE STRUCTURE.  
4. FRAME AND GRATE SHALL BE E.J. USA INCORPORATED MODEL NO. V-5630 OR EQUAL. GRATE IN PEDESTRIAN TRAFFIC AREAS SHALL BE E.J. USA INCORPORATED MODEL NO. V-5630-80 ADA STYLE OR EQUAL. THE GRATE SHALL BE STAMPED WITH "DUMP NO WASTE... DRAINS TO WATERWAYS" WITH FISH IMAGE, OR EQUAL.  
5. SHIM THE FRAME TO MATCH THE CROSS SLOPE AND GUTTER LINE SLOPES OF THE PAVEMENT.

17  
C11  
AREA DRAIN  
NTS



18  
C11  
PIPE BEDDING AND BACKFILL  
NTS



PIPE SIZE	HOLE SIZE	"W"	"L"	"H"	"A"	"B"	"C"	"D"	"E"	"F"
15"	22"	48"	30"	42"	32"	24"	26"	16"	4"	6"
18"	22"	48"	30"	42"	32"	24"	26"	16"	4"	6"
24"	32"	72"	44"	52"	48"	36"	36"	16"	4"	8"

NOTES:  
1. CONCRETE: 4500 PSI @ 28 DAYS  
2. REINFORCING: #4 BAR @ 12" EACH WAY, GRADE 60  
3. MINIMUM REBAR COVERAGE - 2"  
4. 3/4" CHAMFER ON ALL EXPOSED EDGES

19  
C11  
PRECAST CONCRETE HEADWALL  
NTS

NO.	DATE	REVISION	BY	ADC
0	07/10/23	ISSUED FOR CONSTRUCTION		

