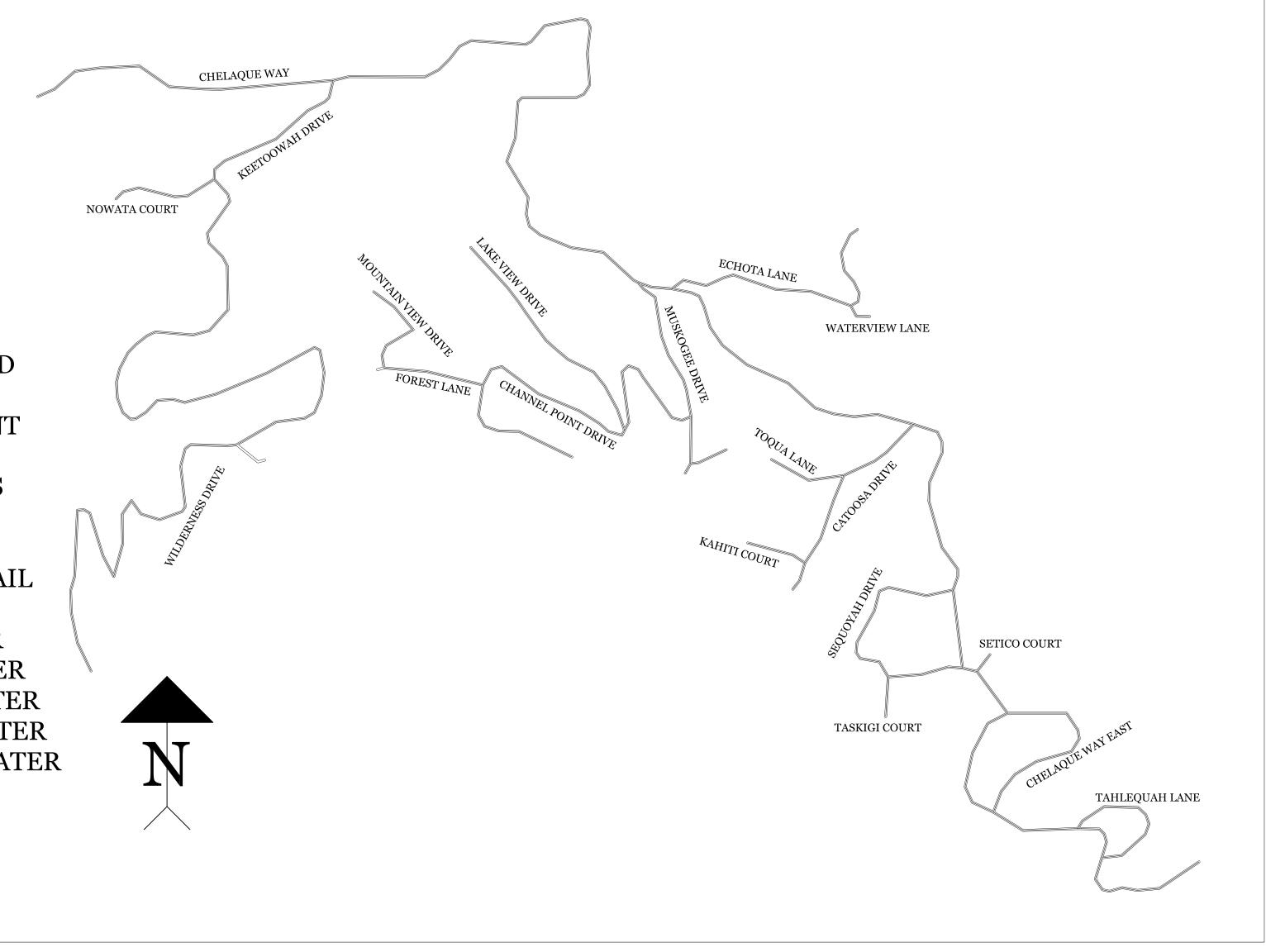
## PREPARED FOR:

# CHELAQUE ESTATES HOMEOWNERS ASSOCIATION

# CHELAQUE ESTATES ROADWAY REPAIRS

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#### **SITE INFORMATION**

#### **PROJECT LOCATION**

STATE: TENNESSEE
COUNTY: HAWKINS
TOWN: MOORESBURG
COORDINATES: 36.32823, -83.19256

#### **CONTACTS**

CLIENTS:
JODY HOWELLS
DAVE HOWELLS
DAVE MARGOZZI

MENTORS: PATRICK FIVEASH SHAP STILES

LOCATION MAP SCALE: N.T.S.

PREPARED BY:

# KNOXX ENGINEERING

THE UNIVERSITY OF TENNESSEE AT KNOXVILLE
TICKLE COLLEGE OF ENGINEERING
DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING
SENIOR DESIGN COURSE EXPERIENCE - CE399S & CE400
SPRING 2022 - FALL 2022
BRADEN BOYD, ASHLEY HIGHTOWER, BRYCE LOTT, AND BEN TRAN



325 JOHN D. TICKLE BUILDING 851 NEYLAND DRIVE KNOXVILLE, TN 37996-2313 IN PARTNERSHIP WITH:







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## GENERAL NOTES

#### GRADING

- ANY AREA THAT IS DISTURBED OUTSIDE LIMITS OF CONSTRUCTION DURING THE LIFE OF THIS PROJECT SHALL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE
- CERTIFICATION FOR ALL BORROW PITS MUST BE OBTAINED IN ACCORDANCE WITH SUBSECTION 107.06 OF THE STANDARD SPECIFICATIONS
- THE CONTRACTOR SHALL NOT DISPOSE OF ANY MATERIAL EITHER ON OR OFF STATE-OWNED R.O.W. IN REGULATORY FLOOD WAY AS DEFINED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) WITHOUT APPROVAL BY FEMA. ALL MATERIAL SHALL BE DISPOSED OF IN UPLAND (NON-WETLAND) AREAS AND ABOVE ORDINARY HIGH WATER OF ANY ADJACENT WATERCOURSE. THIS DOES NOT ELIMINATE THE NEED TO OBTAIN ANY OTHER LICENSES OR PERMITS THAT MAY BE REQUIRED BY ANY OTHER FEDERAL, STATE OR LOCAL AGENCY.
- ARCHAEOLOGICAL SITE NO. \_\_\_ MUST BE AVOIDED AS A SOURCE OF FILL OR HEAVY MACHINERY STAGING AREA. EARTH FILL WILL BE REQUIRED FROM AREAS OUTSIDE THE PROPOSED RIGHT-OF-WAY. CERTIFICATION MUST BE OBTAINED IN ACCORDANCE WITH SUBSECTION 107.06 OF THE STANDARD SPECIFICATIONS.

#### **GUARDRAIL**

- THE CONTRACTOR SHALL NOT REMOVE ANY SECTIONS OF EXISTING GUARDRAIL TO REWORK SHOULDERS OR 9 FLATTEN SLOPES UNTIL THE ENGINEER CONCURS IN THE NECESSITY OF REMOVAL DUE TO CONSTRUCTION REQUIREMENTS AND THE APPROPRIATE WARNINGS DEVICES ARE INSTALLED. THE PROPOSED GUARDRAIL, INCLUDING ANY ANCHOR SYSTEM, SHALL BE INSTALLED QUICKLY TO MINIMIZE TRAFFIC EXPOSURE TO ANY HAZARD. NO PAYMENT WILL BE MADE FOR A SECTION OF PROPOSED GUARDRAIL, INCLUDING ANCHORS, UNTIL IT IS COMPLETE.
- IF ANY APPROACH END OF SECTION OF GUARDRAIL OR BRIDGE RAIL MUST TEMPORARILY BE LEFT INCOMPLETE AND EXPOSED TO TRAFFIC, THE CONTRACTOR SHALL USE TWO (2) TEMPORARY BARRICADES OR 1. DRUMS WITH TYPE "A" LIGHTS AND ROUNDED END ELEMENTS AS MINIMUM MEASURES TO PROTECT TRAFFIC FROM THE HAZARD OF AN EXPOSED END. ALL COST OF FURNISHING AND INSTALLING TEMPORARY BARRICADES OR DRUMS WITH TYPE "A" LIGHTS TO DELINEATE GUARDRAIL END AND A TEMPORARY ROUNDED END ELEMENT SHALL BE INCLUDED IN THE COST OF THE PROPOSED GUARDRAIL END TERMINAL.

#### DRAINAGE

- THE CONTRACTOR SHALL SHAPE DITCHES TO THE SPECIFIED DESIGN. THIS WORK WILL NOT BE MEASURED AND PAID FOR DIRECTLY, BUT THE COST WILL BE INCLUDED IN THE COST OF OTHER ITEMS.
- THE CUTTING OF INLET AND OUTLET DITCHES WHERE SHOWN ON PLANS OR AS DIRECTED BY THE ENGINEER 2. WILL BE MEASURED AND PAID FOR AS ITEM NO. 203-01 ROAD AND DRAINAGE EXCAVATION (UNCLASSIFIED).  $^{3}$
- WHERE A CULVERT (PIPE, SLAB OR BOX) IS MOVED TO A NEW LOCATIONS OTHER THEN THAT SHOWN ON THE PLANS. INCREASING OR DECREASING THE AMOUNT OF CULVERT EXCAVATION WILL NOT RESULT IN AN INCREASE OR DECREASE IN THE AMOUNT OF PAYMENT THAT WILL BE MADE DUE TO SUCH CHANGE. DURING CONSTRUCTION OF DRAINAGE STRUCTURES ALL COST ASSOCIATED WITH MAINTAINING THE FLOW
- OF WATER AND TRAFFIC, AT THESE STRUCTURES, DURING THE PHASED CONSTRUCTION OF THIS PROJECT ARE TO BE INCLUDED IN THE UNIT PRICE OF THE DRAINAGE STRUCTURES AND TRAFFIC CONTROL ITEMS. ALL EXISTING PIPES AS SHOWN ON PLANS OR AS DIRECTED BY THE ENGINEER THAT ARE TO BE LEFT IN
- PLACE AND ABANDONED MUST BE BACKFILLED AND PLUGGED. ALL COST FOR THIS WORK SHALL BE INCLUDED IN ITEM NO. 204-08.01. BACKFILL MATERIAL (FLOWABLE FILL). C.Y.

#### MISCELLANEOUS

- THE CONTRACTOR SHALL BE REQUIRED TO REMOVE AND RESET MAILBOXES AND POSTS WHERE AND AS DIRECTED BY THE ENGINEER. COST TO BE INCLUDED IN PRICE BID FOR OTHER CONSTRUCTION ITEMS.
- NOTHING IN THE GENERAL NOTES OR SPECIAL PROVISIONS SHALL RELIEVE THE CONTRACTOR FROM HIS RESPONSIBILITIES TOWARD THE SAFETY AND CONVENIENCE OF THE GENERAL PUBLIC AND THE RESIDENTS 2. ALONG THE PROPOSED CONSTRUCTION AREA

#### ROAD CLOSURE

NO LESS THAN SEVEN (7) DAYS PRIOR TO THE CLOSURE OF THE ROAD, THE CONTRACTOR SHALL NOTIFY THE FOLLOWING INDIVIDUALS OR AGENCIES COMPLETELY DESCRIBING THE AFFECTED ROADS AND THE APPROXIMATE DURATION OF THE CONSTRUCTION: THESE PARTIES INCLUDE, BUT ARE NOT LIMITED TO: (1) LOCAL LAW ENFORCEMENT OFFICE, (2) LOCAL FIRE DEPARTMENT, (3) AMBULANCE SERVICE, (4) LOCAL SCHOOL SUPERINTENDENT, (5) UNITED STATES POSTAL SERVICE, AND (6) LOCAL ROAD SUPERINTENDENT.

#### PAVEMENT MARKINGS

#### TEMPORARY PAVEMENT MARKINGS ON INTERMEDIATE LAYERS

- TEMPORARY PAVEMENT LINE MARKINGS ON INTERMEDIATE LAYERS OF PAVEMENT SHALL BE REFLECTIVE TAPE OR REFLECTORIZED PAINT INSTALLED TO PERMANENT STANDARDS AT THE END OF EACH DAY'S WORK. 3-SHORT, UNMARKED SECTIONS SHALL NOT BE ALLOWED. THESE MARKINGS WILL BE MEASURED AND PAID FOR UNDER ITEM NO. 716-05.01. PAINTED PAVEMENT MARKING (4" LINE). L.M.
- TEMPORARY PAVEMENT LINE MARKINGS ON INTERMEDIATE LAYERS OF PAVEMENT SHALL BE REFLECTIVE TAPE OR REFLECTORIZED PAINT INSTALLED TO PERMANENT STANDARDS AT THE END OF EACH DAY'S WORK. SHORT, UNMARKED SECTIONS SHALL NOT BE ALLOWED. THESE MARKINGS WILL BE MEASURED AND PAID FOR UNDER ITEM NO. 716-05.20. PAINTED PAVEMENT MARKING (6" LINE). L.M.
- TEMPORARY PAVEMENT LINE MARKINGS ON INTERMEDIATE LAYERS OF PAVEMENT SHALL BE REFLECTIVE TAPE OR REFLECTORIZED PAINT INSTALLED TO PERMANENT STANDARDS AT THE END OF EACH DAY'S WORK. 6. SHORT, UNMARKED SECTIONS SHALL NOT BE ALLOWED. THESE MARKINGS WILL BE MEASURED AND PAID FOR UNDER ITEM NO. 716-05.02. PAINTED PAVEMENT MARKING (8" BARRIER LINE). L.F.
- WIDE (8 INCH) TEMPORARY PAVEMENT MARKING LINE WILL BE MEASURED AND PAID FOR UNDER ITEM NO. 716-05.02 PAINTED PAVEMENT MARKING (8" BARRIER LINE). L.F.

#### FINAL PAVEMENT MARKING

- THE CONTRACTOR WILL BE REQUIRED TO PERFORM THE FOLLOWING WORK:
- SHOULDERS SHALL BE BROOMED AND DE-GRASSED AND MATERIAL SHALL BE PICKED UP AND REMOVED. THIS WILL BE PAID FOR UNDER ITEM NO. 208-01.05.
- REMOVE ALL GARBAGE AND CONSTRUCTION DEBRIS FROM PROJECT. THE COST FOR THIS WILL BE INCLUDE IN THE PRICE BID FOR OTHER ITEMS OF CONSTRUCTION.
- PERMANENT PAVEMENT LINE MARKINGS SHALL BE 6" ENHANCED FLATLINE THERMOPLSTIC INSTALLED TO PERMANENT STANDARDS AT THE END OF EACH DAY'S WORK. SHORT UNMARKED SECTIONS SHALL NOT BE ALLOWED. PAVEMENT MARKINGS WILL BE MEASURED AND PAID FOR UNDER ITEM NO. 716-12.02. ENHANCED FLATLINE THERMO PVMT MRKING (6IN LINE). L.M. THE CONTRACTOR SHALL HAVE THE OPTION OF USING END REFLECTORIZED PAINT INSTALLED TO PERMANENT STANDARDS AT THE END OF EACH DAY'S WORK AND 1. THEN INTALLING THE PERMANENT MARKINGS AFTER THE PAVING OPERATION IS COMPLETED. THE TEMPORARY MARKINGS FOR THE FINAL SURFACE WILL NOT BE MEASURED AND PAID FOR DIRECTLY, BUT THE COSTS ARE TO BE INCLUDED IN THE PRICE BID FOR THE PERMANENT MARKINGS.
- PERMANENT PAVEMENT LINE MARKINGS SHALL BE REFLECTORIZED PAINT INSTALLED TO PERMANENT STANDARDS AT THE END OF EACH DAY'S WORK. SHORT, UNMARKED SECTIONS SHALL NOT BE ALLOWED. THESE MARKINGS WILL BE MEASURED AND PAID FOR UNDER ITEM NO. 716-05.01. PAINTED PAVEMENT MARKING (4IN LINE). L.M.
- PERMANENT PAVEMENT LINE MARKINGS SHALL BE REFLECTORIZED PAINT INSTALLED TO PERMANENT STANDARDS AT THE END OF EACH DAY'S WORK. SHORT, UNMARKED SECTIONS SHALL NOT BE ALLOWED. THESE MARKINGS WILL BE MEASURED AND PAID FOR UNDER ITEM NO. 716-05.20. PAINTED PAVEMENT MARKING (6IN LINE). L.M.
- PERMANENT PAVEMENT LINE MARKINGS SHALL BE REFLECTORIZED PAINT INSTALLED TO PERMANENT STANDARDS AT THE END OF EACH DAY'S WORK. SHORT, UNMARKED SECTIONS SHALL NOT BE ALLOWED. THESE MARKINGS WILL BE MEASURED AND PAID FOR UNDER ITEM NO. 716-05.02. PAINTED PAVEMENT MARKING (8IN BARRIER LINE). L.F.

#### SNOWPLOWABLE REFLECTIVE PAVEMENT MARKERS

REMOVE EXISTING SNOWPLOWABLE MARKERS PRIOR TO PAVING AND/OR COLD PLANING. REMOVE ALL ADHESIVES PRIOR TO PAVING. PATCH ANY HOLES OR DIVOTS RESULTING FROM THE REMOVAL OF A MARKER 5 IN A MANNER WHICH ENSURES A UNIFORM PAVED SURFACE. PATCH WORK SHALL BE INCLUDED WITH COST OF OTHER ITEMS OF CONSTRUCTION.

#### **PAVEMENT**

#### **PAVING**

- THE CONTRACTOR SHALL BE REQUIRED TO PAVE IN THE DIRECTION OF TRAFFIC.
- THE CONTRACTOR SHALL BE REQUIRED TO COLD PLANE AND PAVE IN THE DIRECTION OF TRAFFIC. THE CONTRACTOR SHALL ATTACH A DEVICE TO THE SCREED OF THE PAVER SUCH THAT MATERIAL IS CONFINED AT THE END GATE AND EXTRUDES THE ASPHALT MATERIAL IN SUCH A WAY GO VOLS THAT RESULTS IN A CONSOLIDATED WEDGE-SHAPE PAVEMENT EDGE OF APPROXIMATELY 25 TO 30 DEGREES AS IT LEAVES THE PAVER (MEASURED FROM A LINE PARALLEL TO THE PAVEMENT SURFACE). THE DEVICE SHALL

MEET THE REQUIREMENTS THAT ARE CURRENTLY SET FORTH IN SPECIAL PROVISION 407SE.

#### GRADED SOLED ROCK

- THE ROCK FILL (GRADED SOLID ROCK) MATERIAL SHALL CONSIST OF SOUND, NON-DEGRADABLE LIMESTONE OR SANDSTONE WITH A MAXIMUM SIZE OF 3'-0". AT LEAST 50% (BY WEIGHT) OF THE ROCK SHALL BE UNIFORMLY DISTRIBUTED BETWEEN 1'-0" AND 3'-0" IN DIAMETER, AND NO GREATER THAN 10% (BY WEIGHT) SHALL BE LESS THAN 2" IN DIAMETER. THE MATERIAL SHALL BE ROUGHLY EQUIDIMENSIONAL: THIN, SLABBY MATERIALS WILL NOT BE ACCEPTED. THE CONTRACTOR SHALL BE REQUIRED TO PROCESS THE MATERIAL WITH AN ACCEPTABLE MECHANICAL MEANS (A SCREENING PROCESS CAPABLE OF PRODUCING THE REQUIRED GRADATION). THE ROK SHALL BE APPROVED BY A REPRESENTATIVE OF THE DIVISION OF MATERIALS AND TESTS BEFORE USE.
- THIS GRADED SOLID ROCK MATERIAL SHALL BE PLACED IN LAYERS NOT EXCEEDING FIVE FEET IN DEPTH.

#### **SIGNING**

- THE LETTERS, DIGITS, ARROWS, BORDERS, AND ALPHABET ACCESSORIES ON ALL FLAT SHEET SIGNS SHALL BE APPLIED BY SILK SCREENING PROCESS, EXCEPT THAT CUT-OUT DIRECT APPLIED COPY SHALL BE USED ON LIGHTING ALL FLAT SHEET SIGNS WITH A GREEN BACKGROUND. THE LETTERS, DIGITS, ARROWS, BORDERS, AND ALPHABET ACCESSORIES ON ALL EXTRUDED PANEL SIGNS SHALL BE DEMOUNTABLE AND ATTACHED TO THE 1. SIGN FACE, AS OUTLINED IN THE STANDARD SPECIFICATIONS. ALL SHIELDS ON GUIDE SIGNS SHALL BE DEMOUNTABLE AND ATTACHED TO THE SIGN FACE AS OUTLINED IN THE STANDARD SPECIFICATIONS.
- THE LENGTHS OF ALL SIGN SUPPORTS SHOWN IN THE SIGN SCHEDULE ARE APPROXIMATE AND ARE FOR ESTIMATING PURPOSES ONLY. THE LENGTHS WERE COMPUTED FROM THE CROSS-SECTIONS CONTATINED IN 3. THE CONSTRUCTION PLANS. IN THE EVENT THE SUPPORT LENGTHS ARE 2 FEET SHORTER OR LONGER THAN SHOWN IN PLANS, THE ENGINEER SHALL VERIFY THE SUPPORT TYPE WITH THE TRAFFIC OPERATIONS DIVISION, SIGNING SECTION, TELEPHONE NO. (615)-741-0802. THE CONTRACTOR SHALL VERIFY ALL SUPPORT 5. LENGTHS AT THE SITE PRIOR TO ORDERING MATERIAL.
- THE TOP OF THE SIGN FOOTINGS SHALL BE PLACED LEVEL WITH THE GROUND LINE.
- AFTER THE SIGN LOCATIONS HAVE BEEN STAKED, BUT PRIOR TO ORDERING ANY MATERIAL FOR THE SUPPORTS, THERE SHALL BE A FIELD INSPECTION AND APPROVAL BY THE REGIONAL CONSTRUCTION OFFICE. 7.
- THE CONTRACTOR SHALL BE REQUIRED TO FURNISH LAYOUT DRAWINGS OF ALL EXTRUDED PANEL SIGNS WITH SPACING OF ALL LETTERS, NUMERALS, SHIELDS, AND ARROWS. ONE PDF SET OF THE LAYOUT DRAWINGS SHALL BE SENT TO THE TRAFFIC OPERATIONS DIVISION, SIGNING
- SECTION(TDOT.TrafficOps.Sign-Reviews@tn.gov) FOR REVIEW. ONE PDF SET OF THE LAYOUT DRAWINGS SHALL 8 BE SENT TO THE REGIONAL SIGN DESIGNER FOR REVIEW. ALL SIGNS MARKED "TO BE REMOVED" ARE TO BE REMOVED BY THE CONTRACTOR AND PAID FOR UNDER
- ITEM NO. 713-15 AND BECOME THE PROPERTY OF THE CONTRACTOR. THE EXISTING FOOTINGS ARE TO BE REMOVED 6 INCHES BELOW GROUND LONE.
- THE LETTERS, DIGITS, ARROWS, BORDERS, AND ALPHABET ACCESSORIES ON ALL FLAT SHEET SIGNS SHALL
- BE APPLIED BY SILK SCREENING PROCESS, EXCEPT THAT CUT-OUT DIRECT APPLIED COPY SHALL BE USED ON ALL FLAT SHEET SIGNS WITH A GREEN BACKGROUND, OR BROWN BACKGROUND.
- THE LENGTHS OF ALL SIGN SUPPORTS SHOWN ON THE SIGN SCHEDULE ARE APPROXIMATE AND ARE

- ESTIMATING PURPOSES ONLY. THE CONTRACTOR SHALL VERIFY ALL SUPPORT LENGTHS AT THE SITE PRIOR TO ERECTION.
- THE LETTERS, DIGITS, ARROWS, BORDERS, AND ALPHABET ACCESSORIES ON ALL FLAT SHEET SIGNS SHALL BE APPLIED BY SILK SCREENING PROCESS.
- ALL SIGNS WHICH INTERFERE WITH CONSTRUCTION WILL BE RELOCATED OUTSIDE LIMITS OF CONSTRUCTION BY THE CONTRACTOR. UPON COMPLETION OF CONSTRUCTION, THE CONTRACTOR WILL RESTORE THE SIGNS TO ORIGINAL LOCATION. THE CONTRACTOR SHALL CHECK WITH THE REGIONAL TRAFFIC ENGINEER PRIOR TO MOVING ANY PERMANENT SIGNS.

#### TRAFFIC CONTROL DIRECTIONAL SIGNING

WHEN EXISTING "TOURIST ORIENTED DIRECTIONAL SIGNS" (TODS) ARE ON NON-ACCESS CONTROLLED CONSTRUCTION PROJECTS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING THESE SIGNS IN FULL VIEW TO THE MOTORING PUBLIC DURING ALL PHASES OF CONSTRUCTION. ALL WORK IN MOVING THESE TODS AND TEMPORARY SUPPORTS ARE TO BE PAID FOR UNDER ITEM NO. D, AS DIRECTED BY THE ENGINEER. NEW SUPPORTS AND SIGN FACE FOR FINAL LOCATION WILL BE PAID FOR UNDER OTHER ITEMS OF CONSTRUCTION.

#### CONSTRUCTION WORK ZONE AND TRAFFIC CONTROL

- ADVANCED WARNING SIGNS SHALL NOT BE DISPLAYED MORE THAN FORTY-EIGHT (48) HOURS BEFORE PHYSICAL CONSTRUCTION BEGINS. SIGNS MAY BE ERECTED UP TO ONE WEEK BEFORE NEEDED, IF THE SIGN FACE IS FULLY COVERED.
- IF THE CONTRACTOR MOVES OFF THE PROJECT, HE SHALL COVER OR REMOVE ALL UNNEEDED SIGNS AS DIRECTED BY THE ENGINEER. COSTS OF REMOVAL, COVERING, AND REINSTALLING SIGNS SHALL NOT BE MEASURED AND PAID FOR SEPARATELY, BUT ALL COSTS SHALL BE INCLUDED IN THE ORIGINAL UNIT PRICE BID FOR ITEM NO. 712-06. SIGNS (CONSTRUCTION) PER SQUARE FOOT.
- A LONG TERM BUT SPORADIC USE WARNING SIGN, SUCH AS A FLAGGER SIGN, MAY REMAIN IN PLACE WHEN NOT REQUIRED PROVIDED THE SIGN FACE IS FULLY COVERED.
- TRAFFIC CONTROL DEVICES SHALL NOT BE DISPLAYED OR ERECTED UNLESS RELATED CONDITIONS ARE PRESET NECESSITATING WARNING.
- USE OF BARRICADES, PORTABLE BARRIER RAILS, AND DRUMS SHALL BE LIMITED TO THE IMMEDIATE AREAS OF CONSTRUCTION WHERE A HAZARD IS PRESENT. THESE DEVICES SHALL NOT BE STORED ALONG THE ROADWAY WITHIN THIRTY (30) FEET OF THE EDGE OF THE TRAVELED WAY BEFORE OR AFTER USE UNLESS PROTECTED BY GUARDRAIL, BRIDGE RAIL, AND/OR BARRIERS INSTALLED FOR OTHER PURPOSES FOR ROADWAYS WITH CURRENT ADT'S LESS THAN 1500 AND DESIGN SPEED OF LESS THAN 60 MPH. THIS DISTANCE SHALL INCREASE TO FORTY-FIVE (45) FEET FOR ROADWAYS WITH CURRENT ADT'S OF 1500 OR GREATER AND DESIGN SPEED OF 60 MPH OR GREATER OR ON THE OUTSIDE OF A HORIZONTAL CURVE. THESE DEVICES SHALL BE REMOVED FROM THE CONSTRUCTION WORK ZONE WHEN THE ENGINEER DETERMINES THEY ARE NO LONGER NEEDED. WHERE THERE IS INSUFFICIENT RIGHT-OF-WAY TO PROVIDE FOR THIS REQUIRED SETBACK, THE CONTRACTOR SHALL DETERMINE THE ALTERNATE LOCATIONS AND REQUEST THE ENGINEER'S APPROVAL TO USE THEM.
- THE CONTRACTOR SHALL NOT BE PERMITTED TO ARK ANY VEHICLES OR CONSTRUCTION EQUIPMENT DURING PERIODS OF INACTIVITY, WITHIN THIRTY(30) FEET OF THE EDGE OF PAVEMENT WHEN THE LANE IS OPEN TO TRAFFIC UNLESS PROTECTED BY GUARDRAIL, BRIDGE WALL, AND/OR BARRIERS INSTALLED FOR OTHER PURPOSES FOR ROADWAYS WITH CURRENT ADT'S LESS THAN 1500 AND DESIGN SPEED OF LESS THAN 60 MPH. THIS DISTANCE SHALL BE INCREASED TO FORTY-FIVE (45) FEET FOR ROADWAYS WITH ADT'S 1500 OR GREATER AND DESIGN SPEED OF 60 MPH OR GREATER OR ON THE OUTSIDE OF A HORIZONTAL CURVE. PRIVATELY OWNED VEHICLES SHALL NOT BE ALLOWED TO PARK WITHIN THIRTY (30) FEET OF AN OPEN TRAFFIC LANE AT ANY TIME UNLESS PROTECTED AS DESCRIBED ABOVE FOR ROADWAYS WITH CURRENT ADT'S LESS THAN 1500 AND DESIGN SPEED OF LESS THAN 60 MPH. THIS DISTANCE SHALL BE INCREASED TO FORTY-FIVE (45) FEET FOR ROADWAYS WITH CURRENT ADT'S OF 1500 OR GREATER AND DESIGN SPEED OF 60 MPH OR GREATER OR ON THE OUTSIDE OF A HORIZONTAL CURVE. WHERE THERE IS INSUFFICIENT RIGHT-OF-WAY TO PROVIDE FOR THIS REQUIRED SETBACK, THE CONTRACTOR SHALL DETERMINE THE ALTERNATE LOCATIONS AND REQUEST THE ENGINEER'S APPROVAL TO USE THEM.
- ALL DETOUR AND CONSTRUCTION SIGNING SHALL BE IN STRICT ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- ALL DETOURS SHALL BE PAVED, STRIPED, SIGNED, AND FLEXIBLE DRUMS ARE TO BE IN PLACE BEFORE IT IS OPENED TO TRAFFIC.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR STAKING CONSTRUCTION SIGNS. THE COST OF THIS WORK SHALL BE INCLUDED IN ITEM NO. 712-06. SIGNS (CONSTRUCTION). S.F.

- INSTALLATION AND MATREIALS SHALL COMPLY WITH SECTIONS 714 AND 917 OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION DATED JANUARY 1, 2015 AND WITH THE LATEST REVISIONS TO THE NATIONAL ELECTRIC CODE, NFPA 70. ALL WIRING SHALL BE CONCEALED UNDERGROUND IN 2-INCH SCHEDULE 40 PVC RIGID CONDUIT.
- THE GROUND WIRE SHALL BE RUN INSIDE THE CONDUIT WITHIN STRUCTURES, SHALL BE COLORED GREEN AND HAVE THW INSULATION.
- EXISTING FOUNDATIONS TO BE REMOVED A MINIMUM OF SIX INCHES BELOW GRADE.
- ALL INCIDENTAL EQUIPMENT ND MATERIAL REQUIRED FOR THE SUCCESSFUL EXECUTION OF THIS WORK SHALL BE FURNISHED IN 714 ITEMS WHETHER SPECIFICALLY NOTED OR NOT.
- LIGHT STANDARDS SHALL BE ROUND TAPERED POLES. LENGTH SHALL BE DETERMINED BY REQUIRED MOUNTING HEIGHT.
- STANDARDS SHALL BE DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORT FOR HIGHWAY SIGNS. LUMINARIES AND TRAFFIC SIGNALS PUBLISHED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS.
- STANDARDS SHALL BE DESIGNED FOR 80-MPH WIND PRESSURE AND SHALL SUPPORT A 62-POUND LUMINAIRE ON A 15-FOOT ARM.
- ALL NEW ROADWAY LIGHT STANDARDS SHALL BE MOUNTED ON BASES WITH ACCESS DOOR. TRANSFORMER BASES SHALL MEET AASHTO SPECIFICATIONS AND HAVE FHWA APPROVAL. STANDARDS SHALL BE ALUMINUM WITH TRANSFORMER BASES.
- BRACKET ARMS SHALL BE ROUND TAPERED TRUSS TYPE WITH STRAP MOUNTING AND LENGTHS AS SCHEDULED.
  - BRACKET ARM UPSWEEP SHALL BE THE SAME FOR ALL LIGHT STANDARDS OF THE SAME TYPE.

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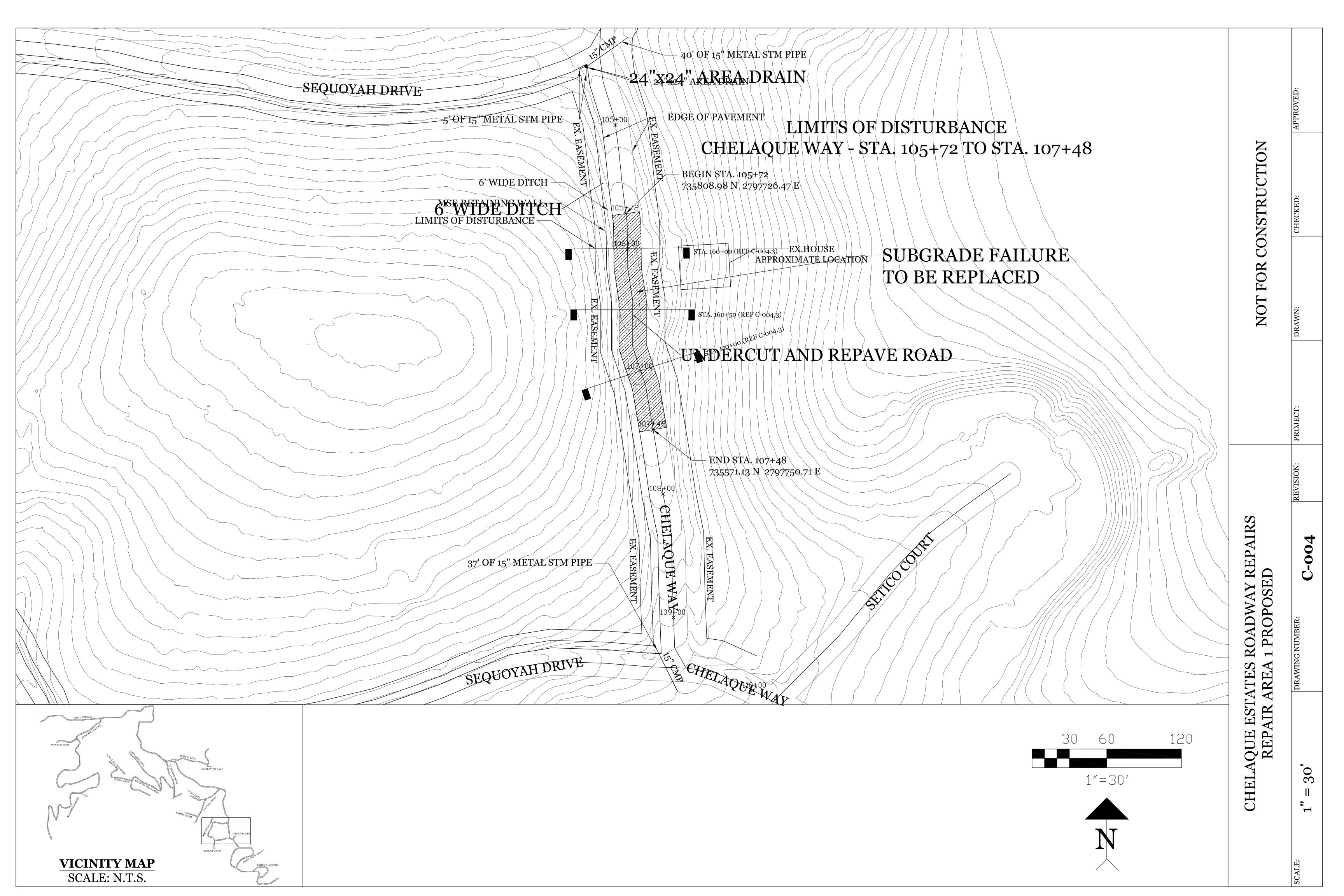
	ESTIMATED QUANTITY FOR ROADWAY R	REPAIRS	
ITEM NO.	DESCRIPTION	UNIT	QUANTITY
1	REMOVAL OF EXISTING ASPHALT	S.Y.	245
2	REMOVAL OF EXISTING BASE STONE	C.Y.	82
3	UNDERCUTTING	S.Y.	245
4	SURFACE COARSE	TON	21
5	ASPHALT BINDER COURSE	TON	32
6	AGGREGATE BASE COURSE	TON	115
7	CENTERLINE STRIPING	L.F.	100

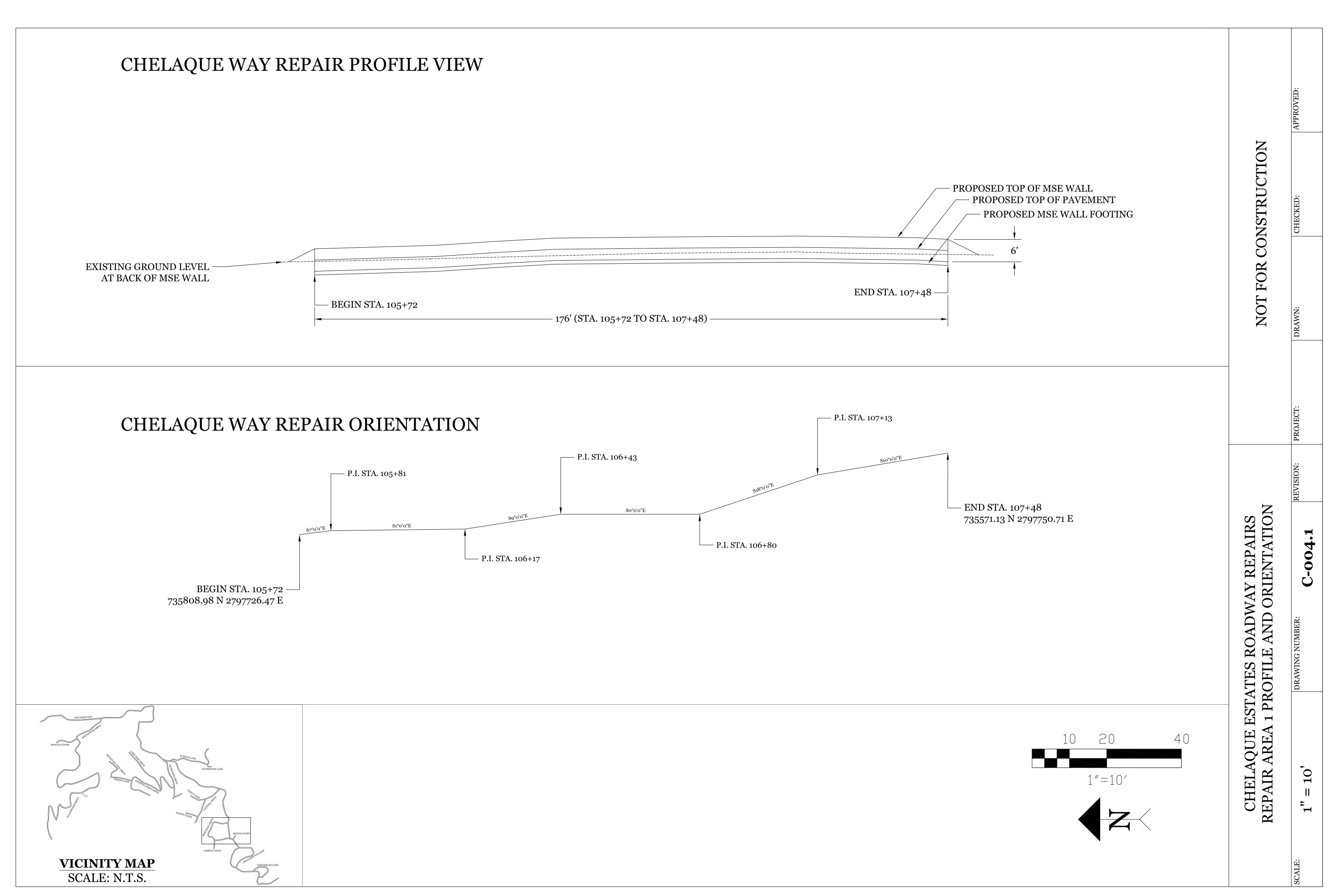
ESTIMATED QUANTITY FOR SAFETY IMPROVEMENTS			
ITEM NO.	DESCRIPTION	UNIT	QUANTITY
1	U-CHANNEL POST	EA.	28
2	TURN WARNING SIGN (LEFT), W1-1, 30"x30"	EA.	2
3	TURN WARNING SIGN (RIGHT), W1-1, 30"x30"	EA.	2
4	CHEVRON SIGN, W1-8, 18"x24"	EA.	48
5	ADVISORY SPEED SIGN 10 MPH, W13-1P, 18"x18"	EA.	4

ESTIMATED QUANTITY FOR STORMWATER IMPROVEMENTS			
ITEM NO.	DESCRIPTION	UNIT	QUANTITY
1	DITCH GRADING	L.F.	1170
2	SEEDING REGRADED DITCH		797
3	EROSION CONTROL MATTING	S.Y.	797

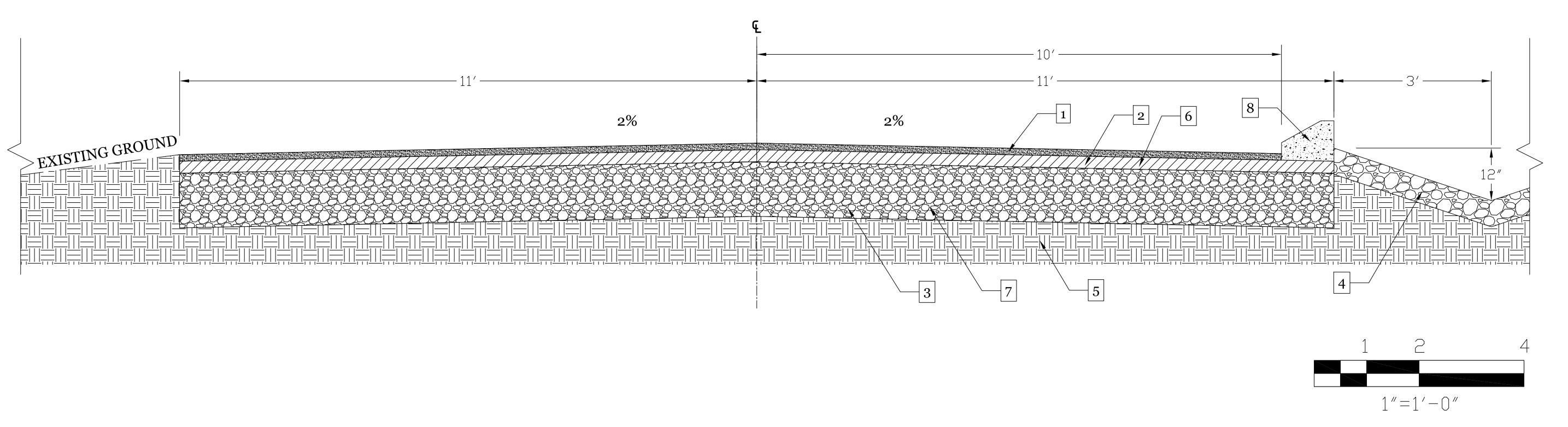
ESTIMATED QUANTITY FOR GEOTECHNICAL IMPROVEMENTS			
ITEM NO.	DESCRIPTION	UNIT	QUANTITY
1	MSE RETAINING WALL	S.F.	1056
2	MSE RETAINING WALL CONCRETE FOOTING	C.F.	352
3	W10x39 STEEL BEAM (12' LENGTH) PER 4' SPAN	EA.	2
4	6"x6"x4' TIMBER LAGGING (4' SP WALL) PER 4' SPAN	EA.	8

SCALE:





# PROPOSED CROSS-SECTION FOR: CHELAQUE WAY STA. 105+72 TO STA. 107+48



CROSS-SECTION PAVEMENT SCHEDULE			
1. SURFACE @ 1.5" THICK ASPHALT (GRADING D)	2. EXISTING BASE @ 4" THICK SMALL AGGREGATES		
3. EXISTING RIP-RAP BASE STONE @ 12" THICK LARGE AGGREGATES	4. RIP-RAP STONES DITCH SLOPE 3':1'		
5. EXISTING SUBGRADE	6. BINDER STONE @ 2.75" THICK SMALL AGGREGATES (B-MOD-2)		
7. BASE STONE @ 12.5" THICK LARGE AGGREGATES (MINERAL AGGREGATE BASE, GRADING D)	8. EXTRUDED CURB		

#### NOTES:

- THE SOIL IS TO BE COMPACTED TO 95% WITH A MAXIMUM OF ONE-FOOT LIFT
- THE EXCAVATION DEPTH IS TO BE AT LEAST THREE FEET DEEP IN AREAS WHERE UNDERLYING SOIL CONTAINS DEBRIS
- EXISTING GROUND SLOPES DEVELOPED FROM MEASURING DISTANCE BETWEEN CONTOURS PERPENDICULAR FROM THE ROADWAY AT STATION
- EXTRUDED CURB SPANS ENTIRE LENGTH OF CONSTRUCTION LIMITS
- RIP-RAP STONES DITCH SPANS ENTIRE LENGTH OF CONSTRUCTION LIMITS
- MSE WALL MEASURES 3' ABOVE AND 3' BELOW CONNECTION WITH STONE DITCH AND SPANS ENTIRE LENGTH OF CONSTRUCTION LIMITS
- MSE WALL INCLUDES 1:2 SLOPED WALL TIEBACKS AT BOTH ENDS OF WALL

OT FOR CONSTRUCTION

DRAWN:

ROJECT:

TSION:

C-004.2

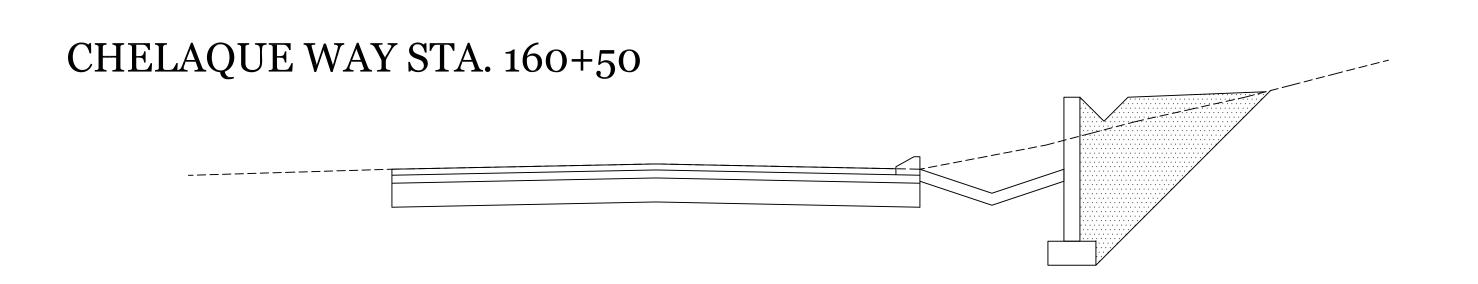
7 REPAIRS SECTIONS

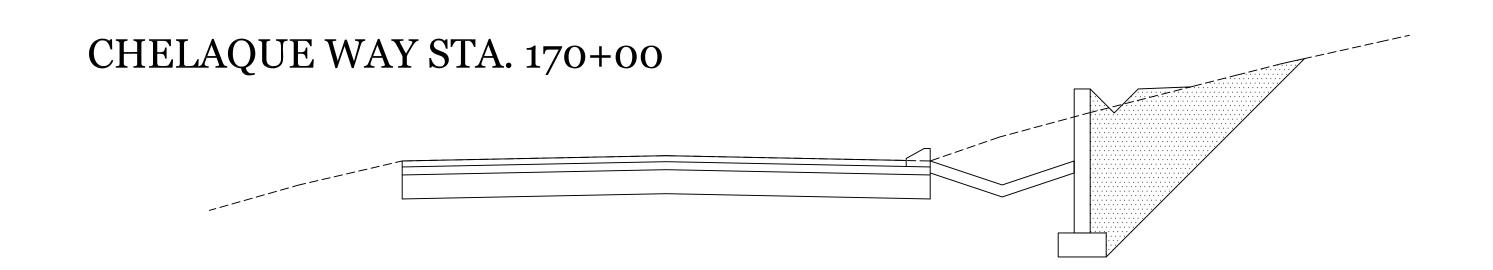
ATES ROADWAY REPAIR CROSS 5

CHELAQUE ESTATES CHELAQUE WAY REP RAWING NUMBER:

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ALE:



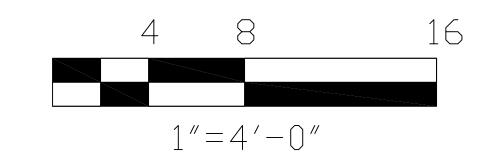


### NOTES:

- PAVEMENT STRUCTURE, STONE DITCH, AND MSE WALL CROSS SECTION IS CONSISTENT ALONG LIMITS OF CONSTRUCTION
- EXISTING GROUND SLOPES DETERMINED BY MEASURING DISTANCE BETWEEN CONTOURS ALONG LINE PERPENDICULAR TO ROADWAY AT STATION
- SOIL AT PAVEMENT STRUCTURE IS TO BE EXCAVATED AND COMPACTED FOR NEW PAVEMENT STRUCTURE (REFER TO SCHEDULE ON C-006)
- STONE DITCH MEASURES 6' IN WIDTH BY 1' IN DEPTH

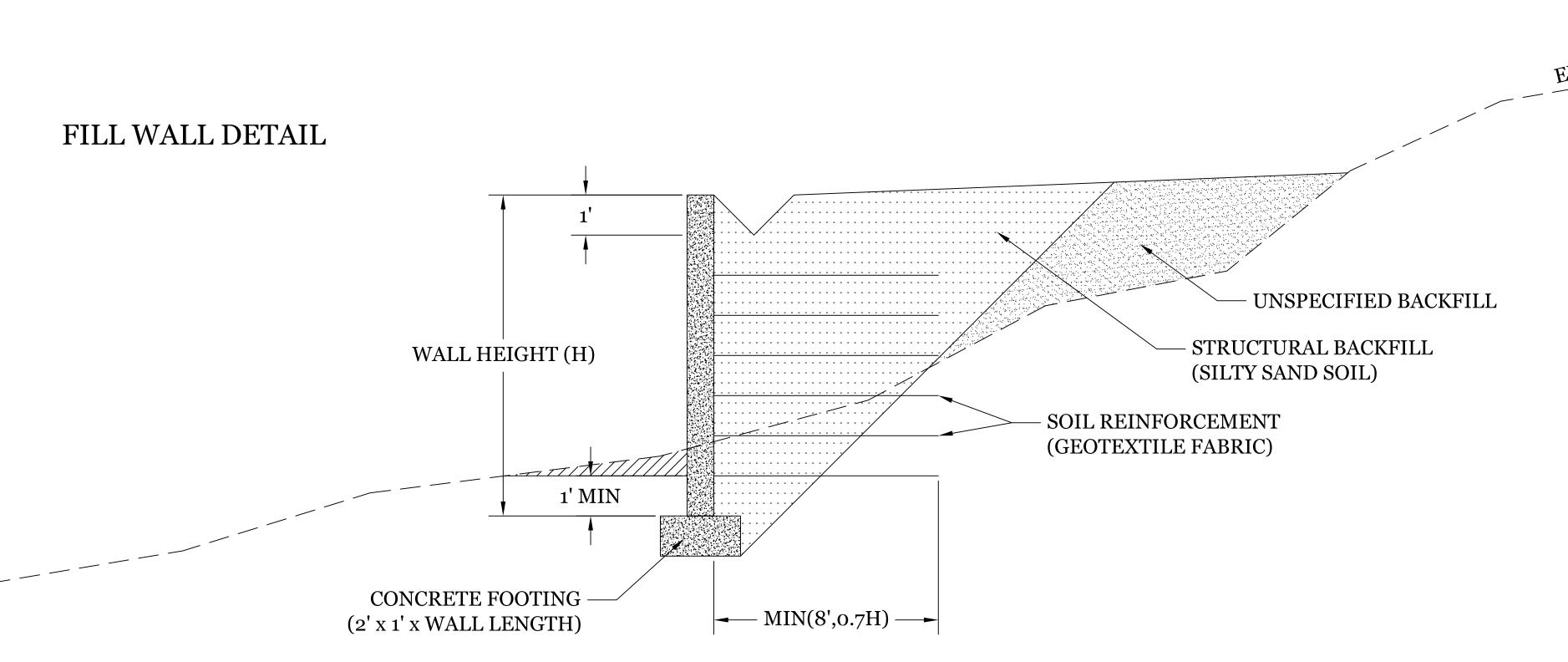
#### MSE WALL

- FOOTING TO BE INSTALLED ALONG LENGTH OF WALL OF DIMENSION 2' WIDTH BY 1' HEIGHT
- 2. WALL FACE TO BE 3' ABOVE AND 3' BELOW THE TOP OF STONE DITCH DEPTH
- 3. EXISTING GROUND TO BE EXCAVATED AT 1:1 SLOPE, AND BACKFILLED WITH SILTY SAND SOIL. BACKFILL IS TO FILLED IN 1'-HEIGHT SEGMENTS, COMPACTING BETWEEN FILLS
- 4. 1'-DEPTH TRENCH TO BE INCLUDED ALONG ENTIRE LENGTH OF WALL FOR DRAINAGE



CHELAQUE ESTATES ROADWAY REPAIRS CHELAQUE WAY REPAIR CROSS-SECTIONS

# MECHANICALLY STABILIZED EARTH (MSE) RETAINING WALL TYPICAL DETAIL



# CUT WALL DETAIL WALL HEIGHT (H) PERMANENT CUT STRUCTURAL BACKFILL (SILTY SAND SOIL) SOIL REINFORCEMENT (GEOTEXTILE FABRIC) CONCRETE FOOTING (2' x 1' x WALL LENGTH)

#### GENERAL NOTES

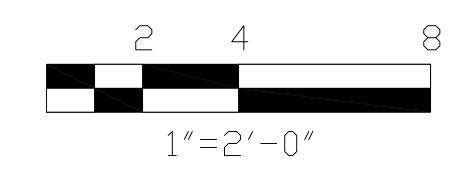
- WALL FOOTING TO SPAN ENTIRE LENGTH OF WALL, OF DIMENSION 2'-DEPTH BY 1'-HEIGHT
- SOIL REINFORCEMENT (GEOTEXTILE FABRIC) REQUIRED FOR WALLS AT LEAST 5'-HEIGHT. NOT REQUIRED FOR WALLS LESS THAN 5'-HEIGHT. REINFORCEMENT LENGTH TO BE THE MINIMUM LENGTH OF 8' OR 0.7 TIMES THE WALL HEIGHT
- 1'-DEPTH TRENCH INCLUDED IN DESIGN FOR DRAINAGE AT WALL HEIGHT

#### FILL WALL DETAIL

- WALL FOOTING TO BE A MINIMUM OF 1'-DEPTH BELOW THE LOWER GROUND LEVEL
- STRUCTURAL BACKFILL TO BE SILTY SAND SOIL, FILLED AND COMPACTED EVERY 1'-HEIGHT OF WALL CONSTRUCTION. STRUCTURAL BACKFILL TO BE INSTALLED AT A MAXIMUM 1:1 SLOPE FROM BASE OF WALL FOOTING
- WALLS WITH SOIL REINFORCEMENT ARE TO PLACE REINFORCEMENT BETWEEN BACKFILL SEGMENTS
- REMAINING FILL AREA UNSPECIFIED, MAY USE SILTY SAND SOIL CONSISTENT WITH STRUCTURAL BACKFILL

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- REMAINING FILL AREA UNSPECIFIED, MAY USE SILTY SAND SOIL CONSISTENT WITH STRUCTURAL BACKFILL
- PERMANENT CUT AREA MAY BE USED FOR UNSPECIFIED BACKFILL AREA



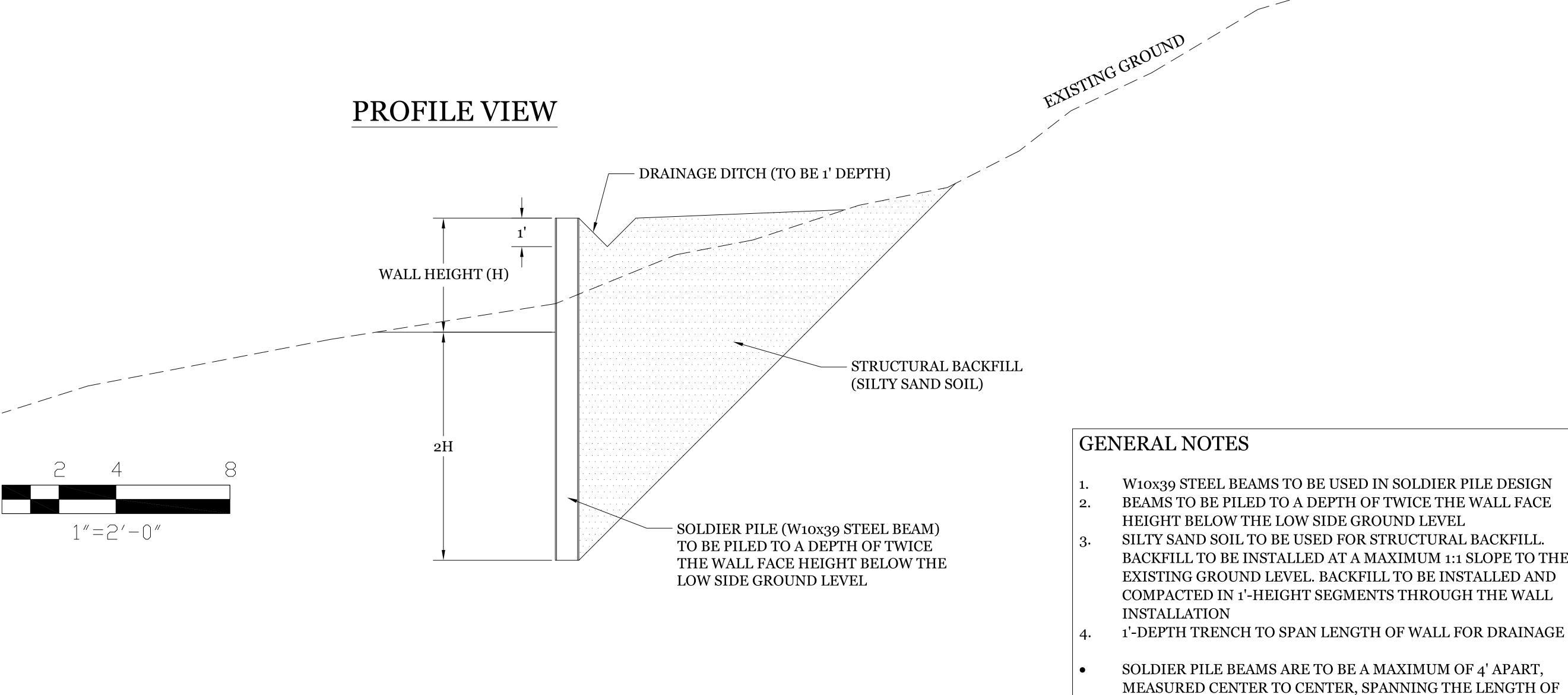
NOT FOR CONSTRUCTION

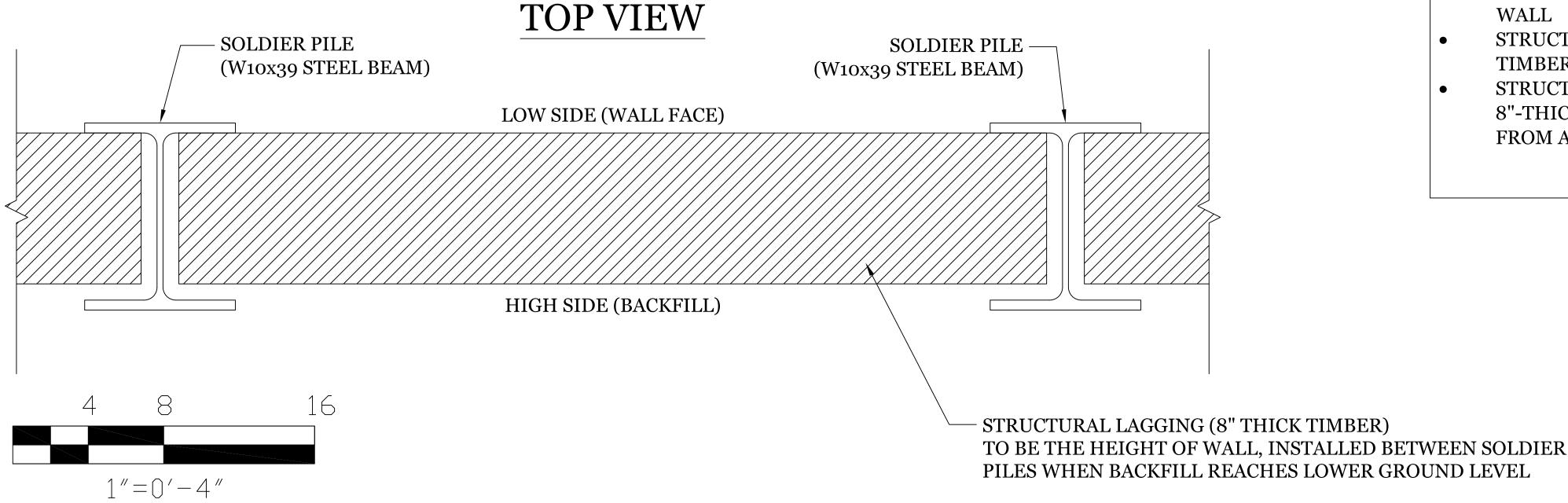
REPAIRS

CHELAQUE ESTATES MSE RETAINING WA

= 2'-0"

LE:



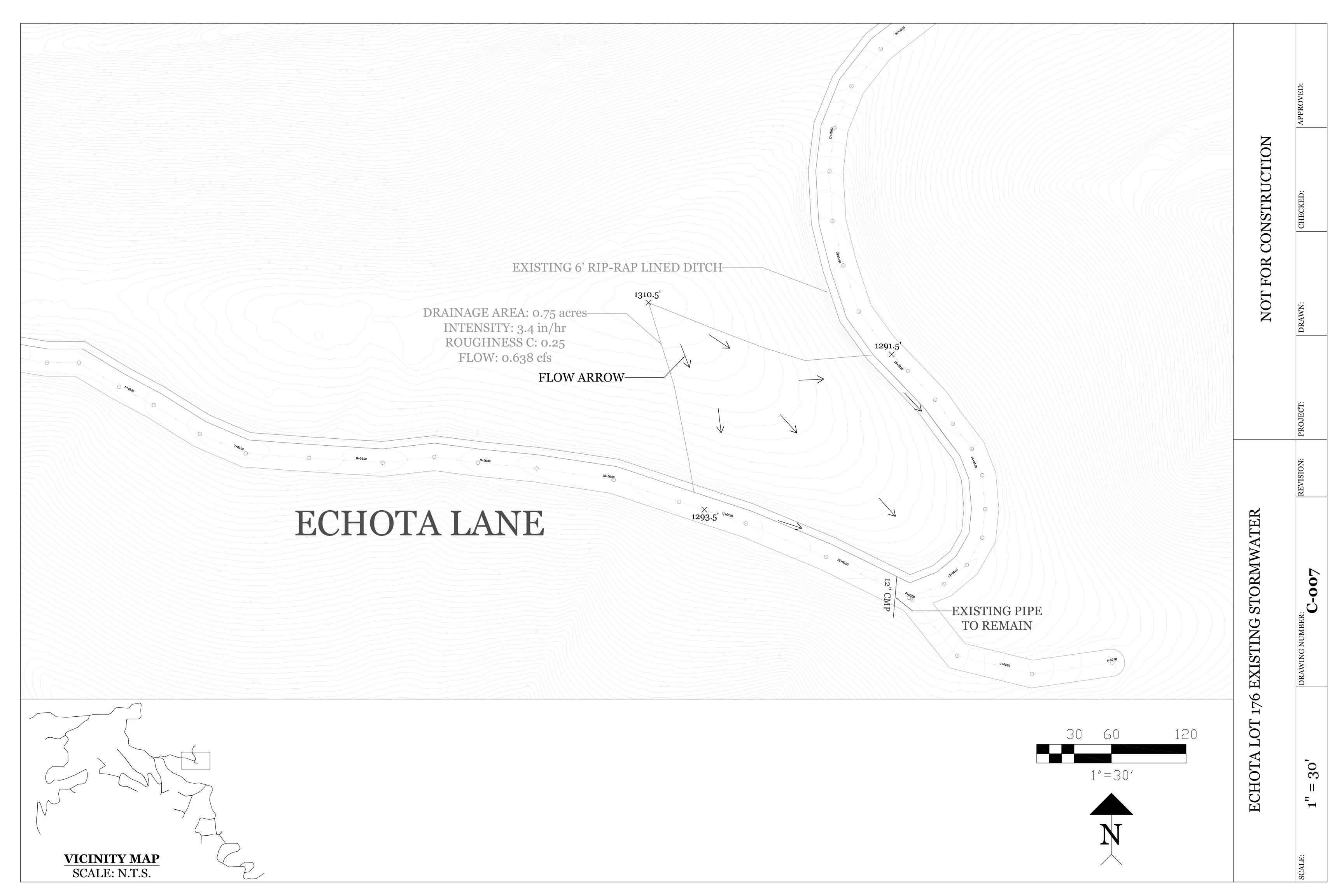


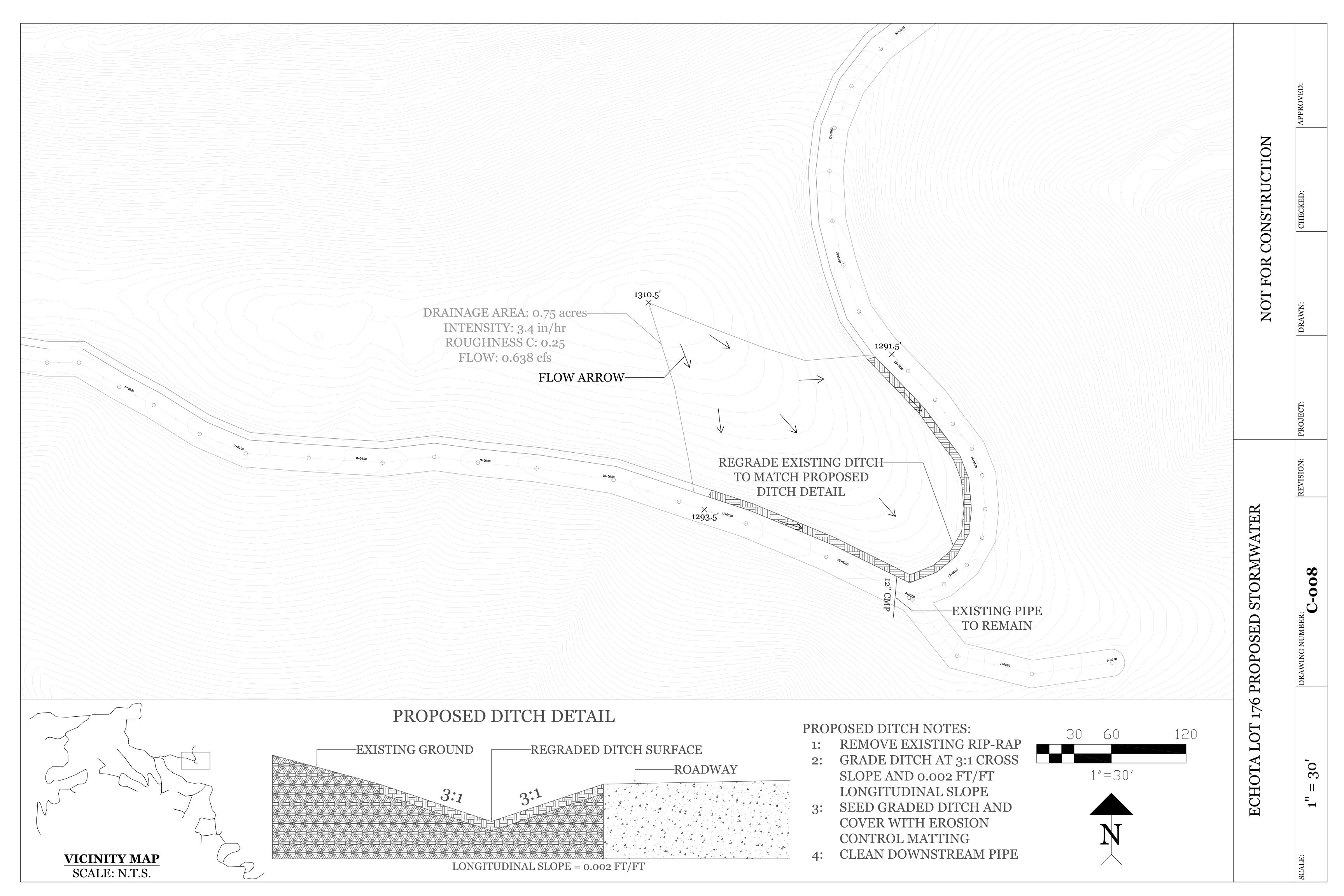
- - SILTY SAND SOIL TO BE USED FOR STRUCTURAL BACKFILL. BACKFILL TO BE INSTALLED AT A MAXIMUM 1:1 SLOPE TO THE EXISTING GROUND LEVEL. BACKFILL TO BE INSTALLED AND COMPACTED IN 1'-HEIGHT SEGMENTS THROUGH THE WALL

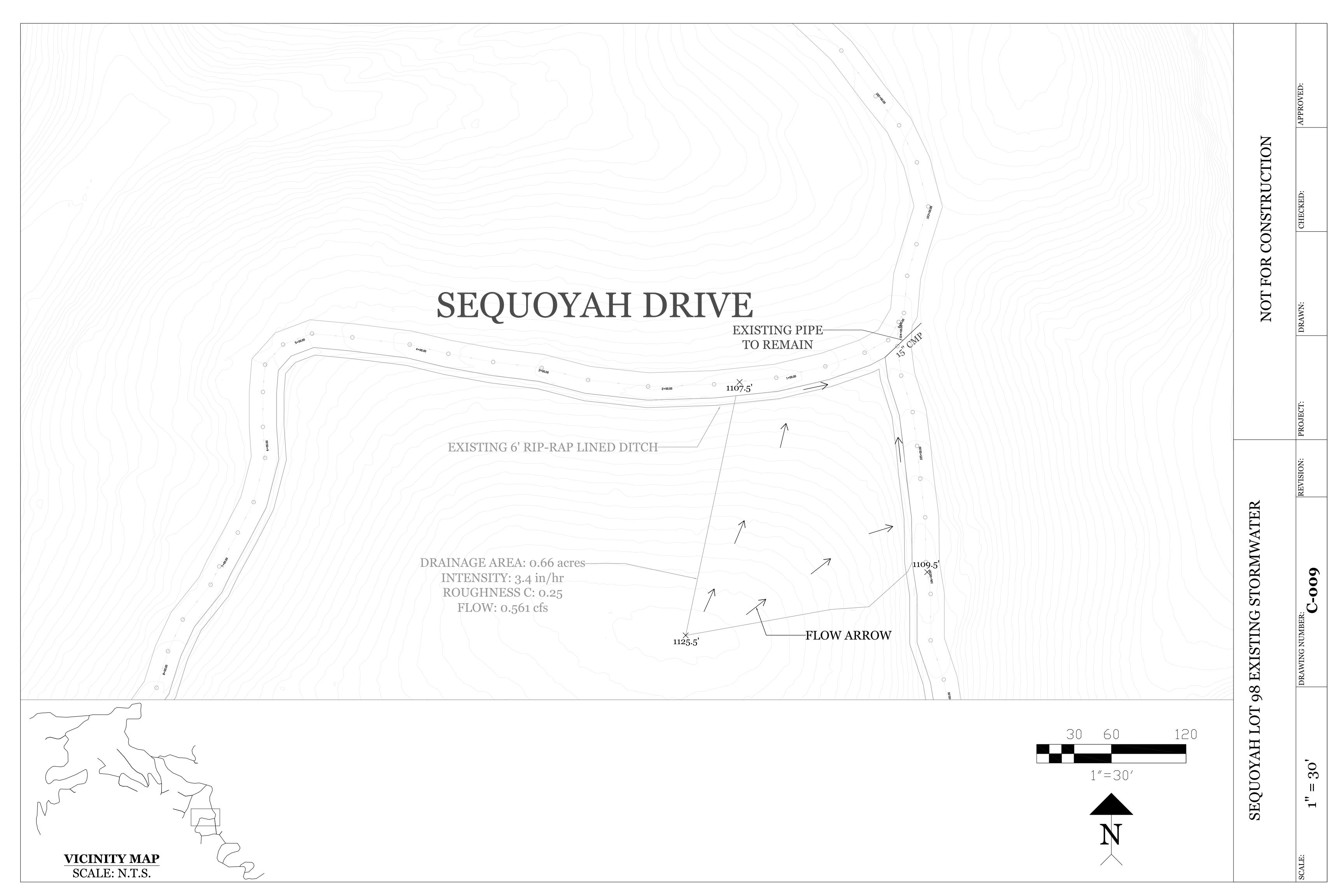
  - SOLDIER PILE BEAMS ARE TO BE A MAXIMUM OF 4' APART, MEASURED CENTER TO CENTER, SPANNING THE LENGTH OF WALL
  - STRUCTURAL LAGGING MATERIAL TO BE YELLOW PINE TIMBER
  - STRUCTURAL LAGGING MATERIAL TO BE A MAXIMUM 8"-THICKNESS AND PLACED BETWEEN SOLDIER PILE BEAMS FROM ABOVE AFTER PLACING BEAMS, BEFORE BACKFILLING

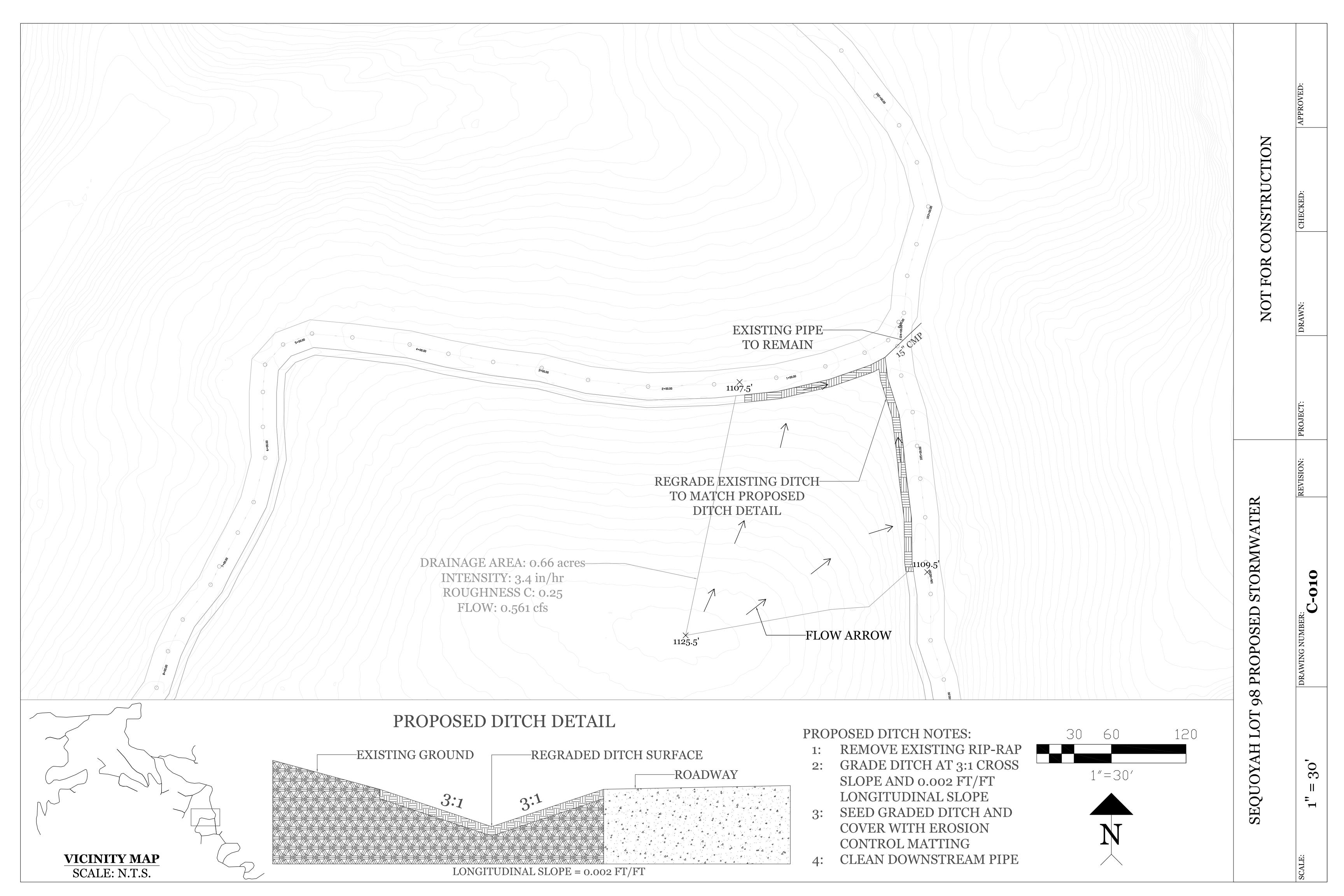
CONSTRUCTION

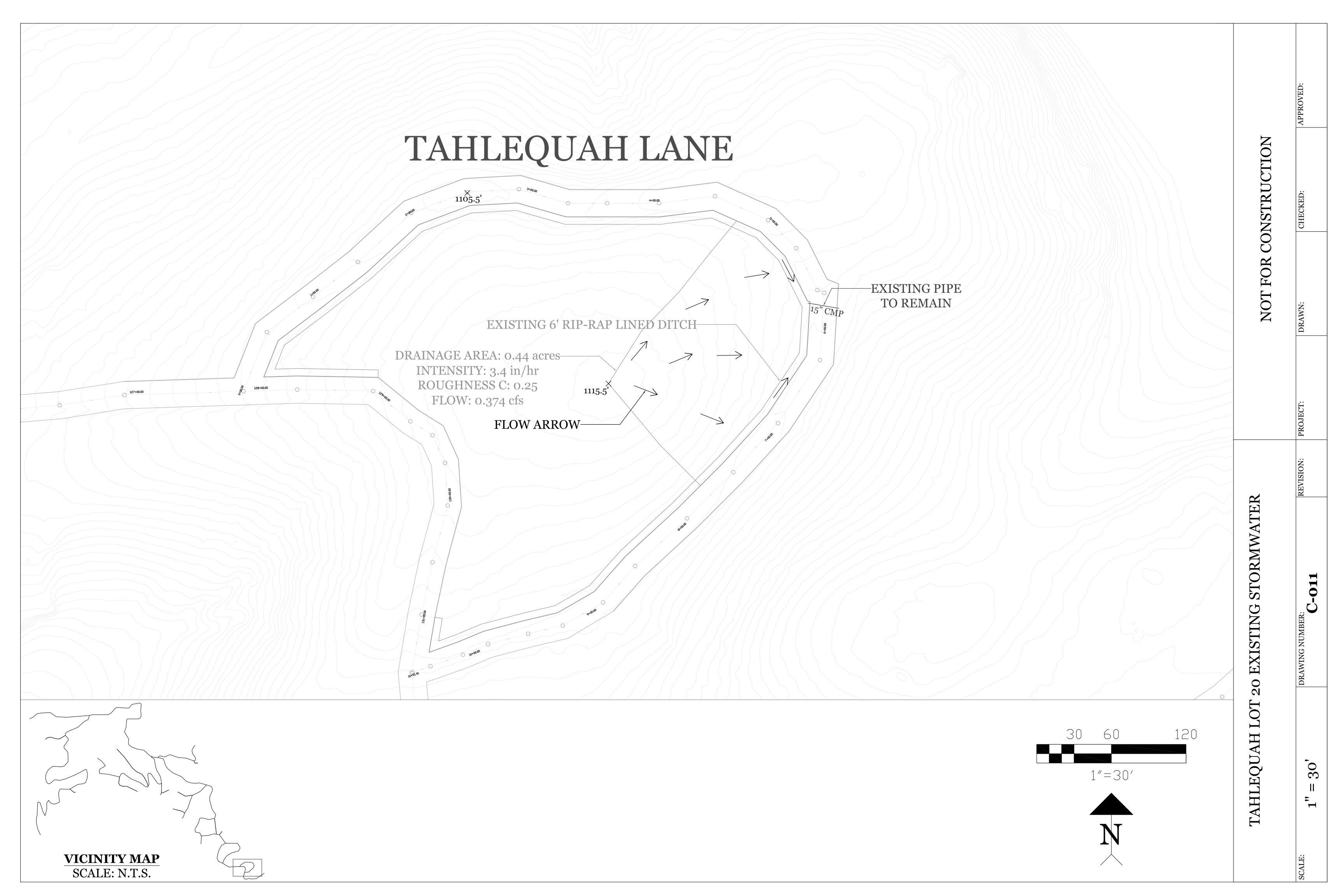
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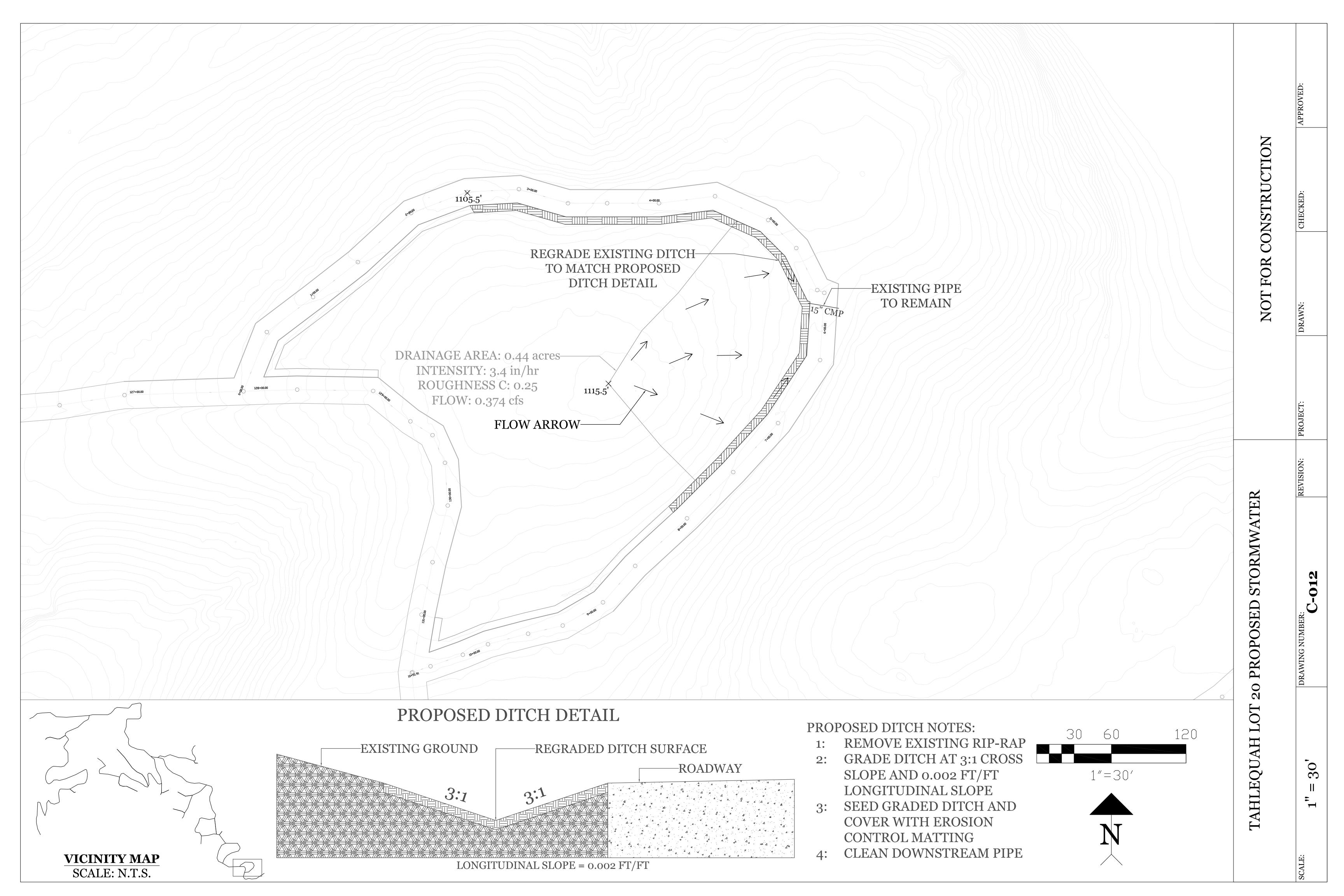


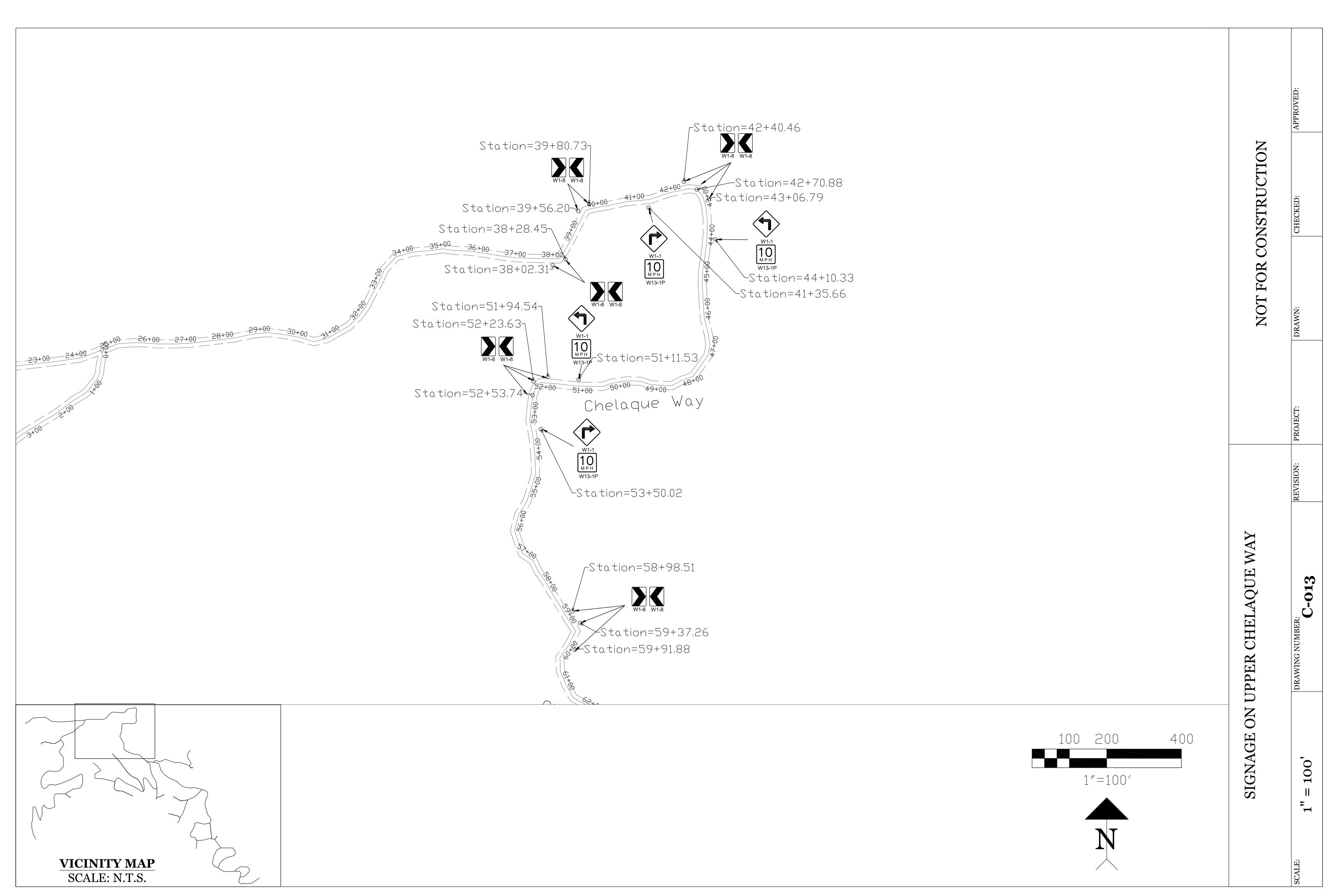


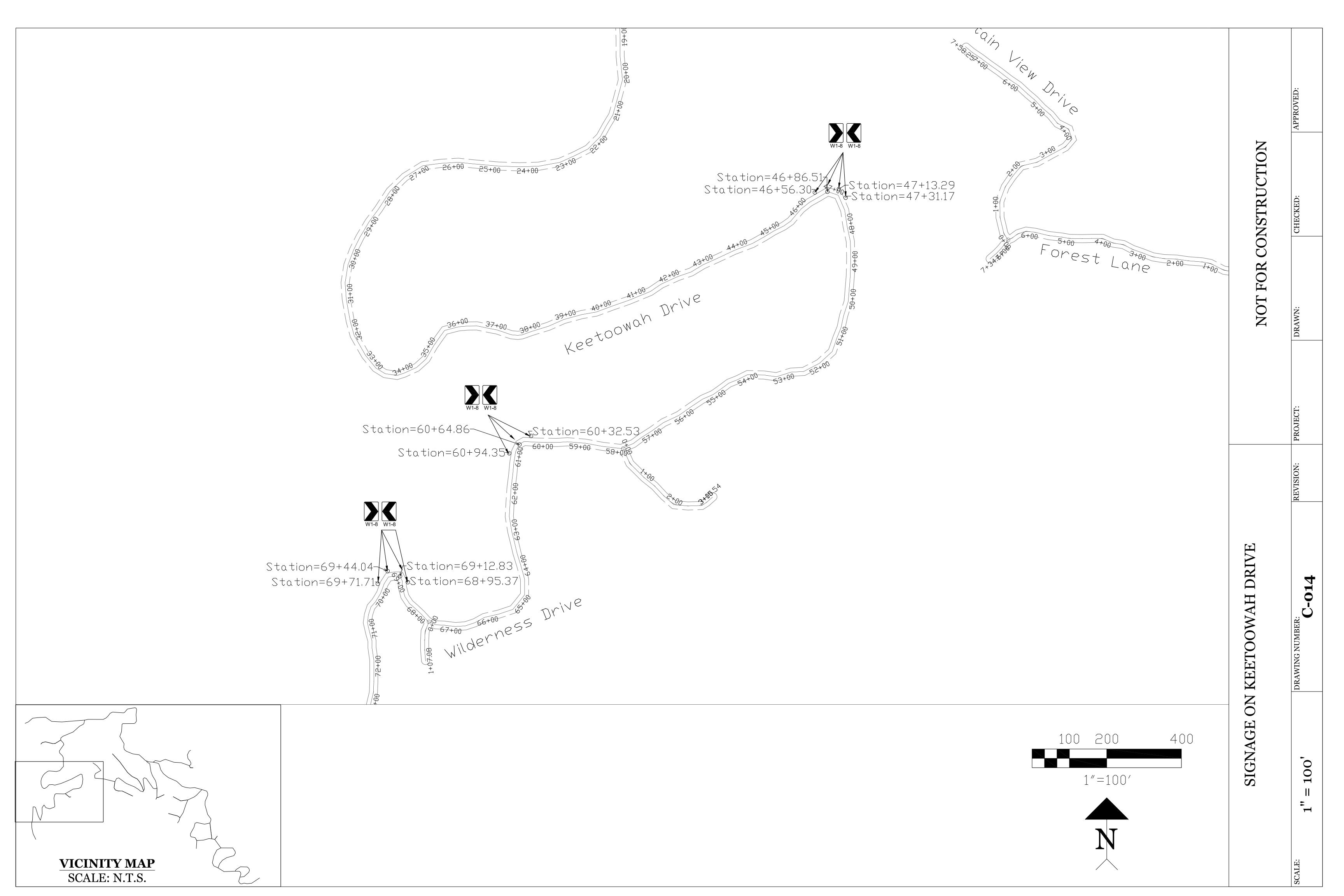












SIGN	SIGN DESIGNATION	QUANTITY	DIMENSIONS	REMARKS	HEIGHT	POST
	W1-1	2	30"X30"	TURN WARNING SIGNS AND ADVISORY SPEED SIGNS SHARE A SIGNPOST, WITH TURN WARNING SIGN ABOVE ADVISORY SPEED	5 FT ABOVE EDGE OF PAVEMENT	U-CHANNEL
	W1-1	2	30"X30"	TURN WARNING SIGNS AND ADVISORY SPEED SIGNS SHARE A SIGNPOST, WITH TURN WARNING SIGN ABOVE ADVISORY SPEED	5 FT ABOVE EDGE OF PAVEMENT	U-CHANNEL
	W1-8	24	18"X24"	48 CHEVRONS TOTAL (1 LEFT AND 1 RIGHT PER SIGNPOST)	5 FT ABOVE EDGE OF PAVEMENT	U-CHANNEL
1 O M P H	W13-1P	4	18"X18"	TURN WARNING SIGNS AND ADVISORY SPEED SIGNS SHARE A SIGNPOST, WITH TURN WARNING SIGN ABOVE ADVISORY SPEED	5 FT ABOVE EDGE OF PAVEMENT	U-CHANNEL

NOT FOR CONSTRUCTION

SIGNAGE SCHEDULE

NOTE: SIGNPOSTS SHOULD BE ANCHORED INTO THE GROUND; WHERE THE GROUND IS TOO STEEP OR UNSTABLE, THEY MAY BE ANCHORED INTO THE GUARDRAIL WHEN POSSIBLE