



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

April 15, 2008

U. S. Army Corps of Engineers
Regulatory Field Office
151 Patton Avenue, Room 208
Asheville, NC 28801-5006

ATTENTION: Mr. David Baker
NCDOT Coordinator

Dear Sir:

SUBJECT: **Nationwide Permit 13, 23 and 33 Application** for the replacement of Bridge No. 34 over Clear Creek on SR 1587 (Bearwallow Road) in Henderson County. Federal Aid Project No. BRZ-1587(2), WBS Element 33498.1.1, Division 14, TIP No. B-4149.

Please see the enclosed pre-construction notification (PCN) form, permit drawings and design plans for the above referenced project. A Programmatic Categorical Exclusion (signed 7/14/2006) has been completed and distributed for this project. Additional copies are available upon request. The North Carolina Department of Transportation (NCDOT) proposes to replace the 82-foot, two-span bridge with a new 165-foot, three-span bridge over Clear Creek. The new bridge will be replaced at the location of the existing bridge, and traffic will be maintained on an off site detour. There will be 20 linear feet of permanent stream impacts to Clear Creek due to bank stabilization, and 0.04 acre of temporary impacts to Clear Creek for the removal of the existing structure. There are no jurisdictional wetlands in the project area.

IMPACTS TO WATERS OF THE UNITED STATES

General Description:

The water resource spanned for project B-4149 is Clear Creek. Clear Creek is located in the French Broad River Basin and is approximately 26 feet wide and 0.5-1.5 feet deep within the project area. The Division of Water Quality (DWQ) Index number for this section of Clear Creek is 6-55-11-(1), and the Hydrological Cataloguing Unit is 06010105. The DWQ classifies Clear Creek as "B, Tr". Within the project area, Clear Creek is listed as 303(d) water due to "Impaired biological integrity", with "agricultural activities" as the potential source according to the *Final 2006 North Carolina Water Quality Assessment and Impaired Waters List*. Clear Creek is also classified as a Designated Public Mountain Trout Water and is Hatchery Supported according to the North Carolina Wildlife Resources Commission (NCWRC).

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS
1598 MAIL SERVICE CENTER
RALEIGH NC 27699-1548

TELEPHONE: 919-715-1334
FAX: 919-715-5501

WEBSITE: WWW.NCDOT.ORG

LOCATION:
PARKER LINCOLN BUILDING,
2728 CAPITAL BLVD.
RALEIGH NC 27604

Permanent Impacts:

There will be 20 feet of bank stabilization necessary on both sides of Clear Creek on the east side of the project due to the relocation of the lateral base ditches to make way for the wider bridge and roadway approaches. There will also be <0.01 acre of permanent fill resulting from the bridge bents in Clear Creek.

Temporary Impacts:

There will be 0.04 acre of temporary stream impacts due to the installation of temporary causeways to remove the existing bents, and the construction of bents 1 and 2.

Utility Impacts:

There will be no jurisdictional impacts associated with relocation of utilities for this project.

Bridge Demolition:

Bridge No. 34 is now considered structurally deficient and functionally obsolete and is approaching the end of its useful life. The bridge is constructed of timber and steel and as mentioned above, a temporary causeway is necessary for the removal of the mass concrete pier. By using this temporary causeway, no components from Bridge No. 34 will enter Clear Creek.

FEDERALLY PROTECTED SPECIES

Plants and animals with federal classifications of Endangered (E), Threatened (T), Proposed Endangered (PE) and Proposed Threatened (PT) are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. As of January 31, 2008, the United States Fish and Wildlife Service (USFWS) lists seven federally protected species for Henderson County (Table1).

Since the completion of the PCE, the Oyster mussel has been removed from the list for Henderson County.

Table 1. Federally Protected Species for Henderson County.

Common Name	Scientific Name	Survey Notes	Last Survey	Biological Conclusion
Bog turtle	<i>Clemmys muhlenbergii</i>	No habitat	n/a	n/a
Appalachian elktoe	<i>Alasmidonta raveneliana</i>	No habitat	5/18/2004	No Effect
Bunched arrowhead	<i>Sagittaria fasciculata</i>	No habitat	n/a	No Effect
Mountain sweet pitcher plant	<i>Sarracenia rubra ssp. jonesii</i>	No habitat	n/a	No Effect
Small whorled pogonia	<i>Isotria medeoloides</i>	No habitat	n/a	No Effect
Swamp pink	<i>Helonias bullata</i>	No habitat	n/a	No Effect
White irisette	<i>Sisyrinchium dichotomum</i>	No habitat	n/a	No Effect

AVOIDANCE, MINIMIZATION AND MITIGATION

Avoidance and Minimization:

Avoidance examines all appropriate and practicable possibilities of averting impacts to "Waters of the United States." The NCDOT is committed to incorporating all reasonable and practicable design features to avoid and minimize jurisdictional impact. In addition, Best Management Practices will be followed as outlined in "NCDOT's Best Management Practices for Construction and Maintenance Activities".

Additional avoidance and minimization efforts for this project include:

- Traffic will be maintained on an off site detour eliminating the need for construction of a temporary on-site detour.
- Water will not be directly discharged into Clear Creek via deck drains.
- The new bridge will be longer, allowing for better hydraulic connectivity for Clear Creek.
- The center bent will be removed and the new bent will be installed on the edge (outside of the thalweg) of Clear Creek.
- Design Standards for Sensitive Waters will apply to this project.
- No more than half of Clear Creek will be blocked by a temporary causeway pad at any one time.
- Due to the trout designation for Clear Creek, a construction moratorium from October 15- April 15 prohibiting in-water and land disturbance within the 25 foot buffer will be observed.

Mitigation:

NCDOT proposes no mitigation for the 20 feet of linear stream impact resulting from the outlet of the lateral base ditches as this activity is not considered a loss of waters of the U.S.

PROJECT SCHEDULE

The project schedule calls for a January 20, 2009 let date, and a review date of December 2, 2008.

REGULATORY APPROVALS

Section 404 Permit:

It is anticipated that the permanent impacts to Clear Creek will be authorized under Section 404 Nationwide Permit 23, the bank stabilization impacts will require a Nationwide 13, and the temporary impacts will be authorized by Nationwide Permit 33. We are, therefore, requesting the issuance of a Nationwide Permit 13, 23 and 33.

Section 401 Permit:

We anticipate 401 General Certification number 3689, 3701 and 3688 will apply to this project. All conditions of the General Certification will be adhered to, therefore, we are not requesting concurrence from NCDWQ. In accordance with 15A NCAC 2H .0501(a) we are providing two copies of this application to the North Carolina Department of Environmental and Natural Resources, Division of Water Quality for their records.

Comments from the North Carolina Wildlife Resources Commission (NCWRC) will be required prior to authorization by the Corps of Engineers. By copy of this letter and attachment, NCDOT hereby requests NCWRC review. NCDOT requests that NCWRC forward their comments to the Corps of Engineers and the NCDOT within 30 calendar days of receipt of this application.

A copy of this application will be posted on the NCDOT website at <http://www.ncdot.org/doh/preconstruct/pe/neu/permit.html>.

Thank you for your assistance with this project. If you have any questions or need additional information, please contact Michael Turchy at maturchy@dot.state.nc.us or (919) 715-1468.

Sincerely,



 Gregory J. Thorpe, Ph.D., Environmental Management Director
Project Development and Environmental Analysis Branch

Cc:

W/attachment

Mr. Brian Wrenn, NCDWQ (2 Copies)
Ms. Marella Buncick, USFWS
Ms. Marla Chambers, NCWRC
Mr. Harold Draper, TVA

W/o attachment (see website for attachments)

Dr. David Chang, P.E., Hydraulics
Mr. Victor Barbour, P.E., Project Services Unit
Mr. Greg Perfetti, P.E., Structure Design
Mr. Mark Staley, Roadside Environmental
Mr. J. B. Setzer, P.E., Division Engineer
Mr. Mark Davis, DEO
Mr. Jay Bennett, P.E., Roadway Design
Mr. Majed Alghandour, P. E., Programming and TIP
Mr. Art McMillan, P.E., Highway Design
Mr. Scott McLendon, USACE, Wilmington
Ms. Pam Williams, PDEA

Office Use Only:

Form Version March 05

USACE Action ID No. _____ **DWQ No.** _____

(If any particular item is not applicable to this project, please enter "Not Applicable" or "N/A".)

I. Processing

1. Check all of the approval(s) requested for this project:

- | | |
|--|--|
| <input checked="" type="checkbox"/> Section 404 Permit | <input type="checkbox"/> Riparian or Watershed Buffer Rules |
| <input type="checkbox"/> Section 10 Permit | <input type="checkbox"/> Isolated Wetland Permit from DWQ |
| <input type="checkbox"/> 401 Water Quality Certification | <input type="checkbox"/> Express 401 Water Quality Certification |

2. Nationwide, Regional or General Permit Number(s) Requested: NW 13, 23 and 33
3. If this notification is solely a courtesy copy because written approval for the 401 Certification is not required, check here:
4. If payment into the North Carolina Ecosystem Enhancement Program (NCEEP) is proposed for mitigation of impacts, attach the acceptance letter from NCEEP, complete section VIII, and check here:
5. If your project is located in any of North Carolina's twenty coastal counties (listed on page 4), and the project is within a North Carolina Division of Coastal Management Area of Environmental Concern (see the top of page 2 for further details), check here:

II. Applicant Information

1. Owner/Applicant Information

Name: Gregory J. Thorpe, Ph.D., Environmental Management Director
Mailing Address: 1598 Mail Service Center

Telephone Number: (919) 733-3141 Fax Number: (919) 733-9794
E-mail Address: maturchy@dot.state.nc.us

2. Agent/Consultant Information (A signed and dated copy of the Agent Authorization letter must be attached if the Agent has signatory authority for the owner/applicant.)

Name: _____
Company Affiliation: _____
Mailing Address: _____

Telephone Number: _____ Fax Number: _____
E-mail Address: _____

III. Project Information

Attach a **vicinity map** clearly showing the location of the property with respect to local landmarks such as towns, rivers, and roads. Also provide a detailed **site plan** showing property boundaries and development plans in relation to surrounding properties. Both the vicinity map and site plan must include a scale and north arrow. The specific footprints of all buildings, impervious surfaces, or other facilities must be included. If possible, the maps and plans should include the appropriate USGS Topographic Quad Map and NRCS Soil Survey with the property boundaries outlined. Plan drawings, or other maps may be included at the applicant's discretion, so long as the property is clearly defined. For administrative and distribution purposes, the USACE requires information to be submitted on sheets no larger than 11 by 17-inch format; however, DWQ may accept paperwork of any size. DWQ prefers full-size construction drawings rather than a sequential sheet version of the full-size plans. If full-size plans are reduced to a small scale such that the final version is illegible, the applicant will be informed that the project has been placed on hold until decipherable maps are provided.

1. Name of project: Replacement of Bridge 34 over Clear Creek on SR 1587 (Bearwallow Rd).
2. T.I.P. Project Number or State Project Number (NCDOT Only): B-4149
3. Property Identification Number (Tax PIN): N/A
4. Location
County: Henderson Nearest Town: Maxwell Mill
Subdivision name (include phase/lot number): N/A
Directions to site (include road numbers/names, landmarks, etc.): _____
5. Site coordinates (For linear projects, such as a road or utility line, attach a sheet that separately lists the coordinates for each crossing of a distinct waterbody.)
Decimal Degrees (6 digits minimum): 35.4178 °N -82.3594 °W
6. Property size (acres): N/A
7. Name of nearest receiving body of water: Clear Creek
8. River Basin: French Broad
(Note: this must be one of North Carolina's seventeen designated major river basins. The River Basin map is available at <http://h2o.enr.state.nc.us/admin/maps/>.)
9. Describe the existing conditions on the site and general land use in the vicinity of the project at the time of this application: The land uses surrounding and within the project area are primarily woodland and scattered residential homes.
10. Describe the overall project in detail, including the type of equipment to be used: Standard construction equipment will be used (backhoes, bulldozers, cranes and/or other heavy machinery)

11. Explain the purpose of the proposed work: The purpose of the project is to replace a functionally and structurally obsolete structure. and to obtain a safer and more efficient traffic operation.

IV. Prior Project History

If jurisdictional determinations and/or permits have been requested and/or obtained for this project (including all prior phases of the same subdivision) in the past, please explain. Include the USACE Action ID Number, DWQ Project Number, application date, and date permits and certifications were issued or withdrawn. Provide photocopies of previously issued permits, certifications or other useful information. Describe previously approved wetland, stream and buffer impacts, along with associated mitigation (where applicable). If this is a NCDOT project, list and describe permits issued for prior segments of the same T.I.P. project, along with construction schedules. None.

V. Future Project Plans

Are any future permit requests anticipated for this project? If so, describe the anticipated work, and provide justification for the exclusion of this work from the current application.
None.

VI. Proposed Impacts to Waters of the United States/Waters of the State

It is the applicant's (or agent's) responsibility to determine, delineate and map all impacts to wetlands, open water, and stream channels associated with the project. Each impact must be listed separately in the tables below (e.g., culvert installation should be listed separately from riprap dissipater pads). Be sure to indicate if an impact is temporary. All proposed impacts, permanent and temporary, must be listed, and must be labeled and clearly identifiable on an accompanying site plan. All wetlands and waters, and all streams (intermittent and perennial) should be shown on a delineation map, whether or not impacts are proposed to these systems. Wetland and stream evaluation and delineation forms should be included as appropriate. Photographs may be included at the applicant's discretion. If this proposed impact is strictly for wetland or stream mitigation, list and describe the impact in Section VIII below. If additional space is needed for listing or description, please attach a separate sheet.

1. Provide a written description of the proposed impacts: Permanent: 20 linear feet of impacts to Crabtree Creek due to bank stabilization and 0.04 ac of temporary impacts associated with the construction and removal of the bridge.

2. Individually list wetland impacts. Types of impacts include, but are not limited to mechanized clearing, grading, fill, excavation, flooding, ditching/drainage, etc. For dams, separately list impacts due to both structure and flooding.

Wetland Impact Site Number (indicate on map)	Type of Impact	Type of Wetland (e.g., forested, marsh, herbaceous, bog, etc.)	Located within 100-year Floodplain (yes/no)	Distance to Nearest Stream (linear feet)	Area of Impact (acres)
None					
Total Wetland Impact (acres)					

3. List the total acreage (estimated) of all existing wetlands on the property: None

4. Individually list all intermittent and perennial stream impacts. Be sure to identify temporary impacts. Stream impacts include, but are not limited to placement of fill or culverts, dam construction, flooding, relocation, stabilization activities (e.g., cement walls, rip-rap, crib walls, gabions, etc.), excavation, ditching/straightening, etc. If stream relocation is proposed, plans and profiles showing the linear footprint for both the original and relocated streams must be included. To calculate acreage, multiply length X width, then divide by 43,560.

Stream Impact Number (indicate on map)	Stream Name	Type of Impact	Perennial or Intermittent?	Average Stream Width Before Impact	Impact Length (linear feet)	Area of Impact (acres)
1	Clear Creek	Permanent	Perennial	26	20	<0.01
1	Clear Creek	Temporary	Perennial	26	59	0.04
Total Permanent Stream Impact (by length and acreage)					79	0.05

5. Individually list all open water impacts (including lakes, ponds, estuaries, sounds, Atlantic Ocean and any other water of the U.S.). Open water impacts include, but are not limited to fill, excavation, dredging, flooding, drainage, bulkheads, etc.

Open Water Impact Site Number (indicate on map)	Name of Waterbody (if applicable)	Type of Impact	Type of Waterbody (lake, pond, estuary, sound, bay, ocean, etc.)	Area of Impact (acres)
No open water impacts				
Total Open Water Impact (acres)				

6. List the cumulative impact to all Waters of the U.S. resulting from the project:

Stream Impact (acres):	<0.01 (20')
Wetland Impact (acres):	
Open Water Impact (acres):	
Total Impact to Waters of the U.S. (acres)	<0.01 (20')
Total Stream Impact:	<0.01 (20')

7. Isolated Waters

Do any isolated waters exist on the property? Yes No

Describe all impacts to isolated waters, and include the type of water (wetland or stream) and the size of the proposed impact (acres or linear feet). Please note that this section only applies to waters that have specifically been determined to be isolated by the USACE.

8. Pond Creation

If construction of a pond is proposed, associated wetland and stream impacts should be included above in the wetland and stream impact sections. Also, the proposed pond should be described here and illustrated on any maps included with this application.

Pond to be created in (check all that apply): uplands stream wetlands
 Describe the method of construction (e.g., dam/embankment, excavation, installation of draw-down valve or spillway, etc.): _____

Proposed use or purpose of pond (e.g., livestock watering, irrigation, aesthetic, trout pond, local stormwater requirement, etc.): _____

Current land use in the vicinity of the pond: _____

Size of watershed draining to pond: _____ Expected pond surface area: _____

VII. Impact Justification (Avoidance and Minimization)

Specifically describe measures taken to avoid the proposed impacts. It may be useful to provide information related to site constraints such as topography, building ordinances, accessibility, and financial viability of the project. The applicant may attach drawings of alternative, lower-impact site layouts, and explain why these design options were not feasible. Also discuss how impacts were minimized once the desired site plan was developed. If applicable, discuss construction techniques to be followed during construction to reduce impacts. Traffic will be maintained on an off-site detour during construction. No deck drains will be used and NCDOT's Best Management Practices will be followed.

VIII. Mitigation

DWQ - In accordance with 15A NCAC 2H .0500, mitigation may be required by the NC Division of Water Quality for projects involving greater than or equal to one acre of impacts to freshwater wetlands or greater than or equal to 150 linear feet of total impacts to perennial streams.

USACE – In accordance with the Final Notice of Issuance and Modification of Nationwide Permits, published in the Federal Register on January 15, 2002, mitigation will be required when

necessary to ensure that adverse effects to the aquatic environment are minimal. Factors including size and type of proposed impact and function and relative value of the impacted aquatic resource will be considered in determining acceptability of appropriate and practicable mitigation as proposed. Examples of mitigation that may be appropriate and practicable include, but are not limited to: reducing the size of the project; establishing and maintaining wetland and/or upland vegetated buffers to protect open waters such as streams; and replacing losses of aquatic resource functions and values by creating, restoring, enhancing, or preserving similar functions and values, preferable in the same watershed.

If mitigation is required for this project, a copy of the mitigation plan must be attached in order for USACE or DWQ to consider the application complete for processing. Any application lacking a required mitigation plan or NCEEP concurrence shall be placed on hold as incomplete. An applicant may also choose to review the current guidelines for stream restoration in DWQ's Draft Technical Guide for Stream Work in North Carolina, available at <http://h2o.enr.state.nc.us/ncwetlands/strmgide.html>.

1. Provide a brief description of the proposed mitigation plan. The description should provide as much information as possible, including, but not limited to: site location (attach directions and/or map, if offsite), affected stream and river basin, type and amount (acreage/linear feet) of mitigation proposed (restoration, enhancement, creation, or preservation), a plan view, preservation mechanism (e.g., deed restrictions, conservation easement, etc.), and a description of the current site conditions and proposed method of construction. Please attach a separate sheet if more space is needed.

No mitigation is proposed for this project due to the minimal amount of impact and that the proposed activity is not considered a "Loss of Waters of the US".

2. Mitigation may also be made by payment into the North Carolina Ecosystem Enhancement Program (NCEEP). Please note it is the applicant's responsibility to contact the NCEEP at (919) 715-0476 to determine availability, and written approval from the NCEEP indicating that they are will to accept payment for the mitigation must be attached to this form. For additional information regarding the application process for the NCEEP, check the NCEEP website at <http://h2o.enr.state.nc.us/wrp/index.htm>. If use of the NCEEP is proposed, please check the appropriate box on page five and provide the following information:

Amount of stream mitigation requested (linear feet): 0
Amount of buffer mitigation requested (square feet): 0
Amount of Riparian wetland mitigation requested (acres): 0
Amount of Non-riparian wetland mitigation requested (acres): 0
Amount of Coastal wetland mitigation requested (acres): 0

IX. Environmental Documentation (required by DWQ)

1. Does the project involve an expenditure of public (federal/state/local) funds or the use of public (federal/state) land? Yes No

2. If yes, does the project require preparation of an environmental document pursuant to the requirements of the National or North Carolina Environmental Policy Act (NEPA/SEPA)?
Note: If you are not sure whether a NEPA/SEPA document is required, call the SEPA coordinator at (919) 733-5083 to review current thresholds for environmental documentation.
Yes No
3. If yes, has the document review been finalized by the State Clearinghouse? If so, please attach a copy of the NEPA or SEPA final approval letter. Yes No

X. Proposed Impacts on Riparian and Watershed Buffers (required by DWQ)

It is the applicant's (or agent's) responsibility to determine, delineate and map all impacts to required state and local buffers associated with the project. The applicant must also provide justification for these impacts in Section VII above. All proposed impacts must be listed herein, and must be clearly identifiable on the accompanying site plan. All buffers must be shown on a map, whether or not impacts are proposed to the buffers. Correspondence from the DWQ Regional Office may be included as appropriate. Photographs may also be included at the applicant's discretion.

1. Will the project impact protected riparian buffers identified within 15A NCAC 2B .0233 (Neuse), 15A NCAC 2B .0259 (Tar-Pamlico), 15A NCAC 02B .0243 (Catawba) 15A NCAC 2B .0250 (Randleman Rules and Water Supply Buffer Requirements), or other (please identify _____)? Yes No
2. If "yes", identify the square feet and acreage of impact to each zone of the riparian buffers. If buffer mitigation is required calculate the required amount of mitigation by applying the buffer multipliers.

Zone*	Impact (square feet)	Multiplier	Required Mitigation
1		3 (2 for Catawba)	
2		1.5	
Total			

* Zone 1 extends out 30 feet perpendicular from the top of the near bank of channel; Zone 2 extends an additional 20 feet from the edge of Zone 1.

3. If buffer mitigation is required, please discuss what type of mitigation is proposed (i.e., Donation of Property, Riparian Buffer Restoration / Enhancement, or Payment into the Riparian Buffer Restoration Fund). Please attach all appropriate information as identified within 15A NCAC 2B .0242 or .0244, or .0260. N/A

XI. Stormwater (required by DWQ)

Describe impervious acreage (existing and proposed) versus total acreage on the site. Discuss stormwater controls proposed in order to protect surface waters and wetlands downstream from the property. If percent impervious surface exceeds 20%, please provide calculations

demonstrating total proposed impervious level. Impervious surfaces will not significantly increase as a result of this project. Water will not directly discharge into Clear Creek.

XII. Sewage Disposal (required by DWQ)

Clearly detail the ultimate treatment methods and disposition (non-discharge or discharge) of wastewater generated from the proposed project, or available capacity of the subject facility.

N/A

XIII. Violations (required by DWQ)

Is this site in violation of DWQ Wetland Rules (15A NCAC 2H .0500) or any Buffer Rules?
Yes No

Is this an after-the-fact permit application? Yes No

XIV. Cumulative Impacts (required by DWQ)

Will this project (based on past and reasonably anticipated future impacts) result in additional development, which could impact nearby downstream water quality? Yes No

If yes, please submit a qualitative or quantitative cumulative impact analysis in accordance with the most recent North Carolina Division of Water Quality policy posted on our website at <http://h2o.enr.state.nc.us/ncwetlands>. If no, please provide a short narrative description: _____

The new bridge will be constructed near the location of the old bridge.

XV. Other Circumstances (Optional):

It is the applicant's responsibility to submit the application sufficiently in advance of desired construction dates to allow processing time for these permits. However, an applicant may choose to list constraints associated with construction or sequencing that may impose limits on work schedules (e.g., draw-down schedules for lakes, dates associated with Endangered and Threatened Species, accessibility problems, or other issues outside of the applicant's control).

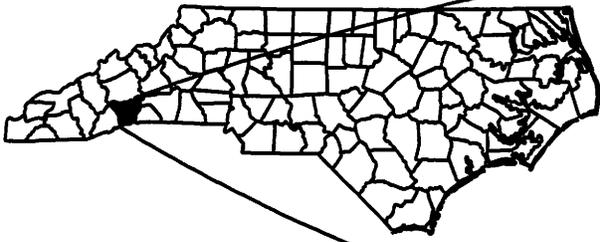
E. P. Luer

Applicant/Agent's Signature

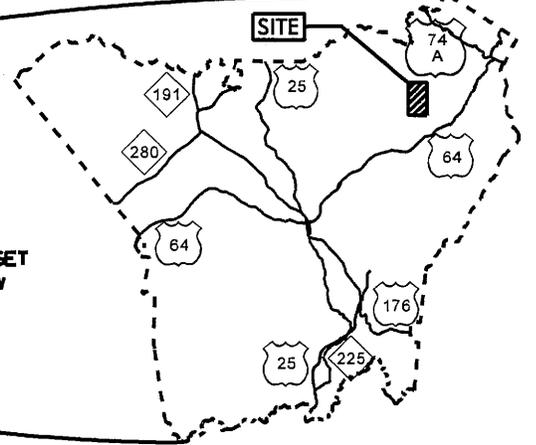
4-11-08

Date

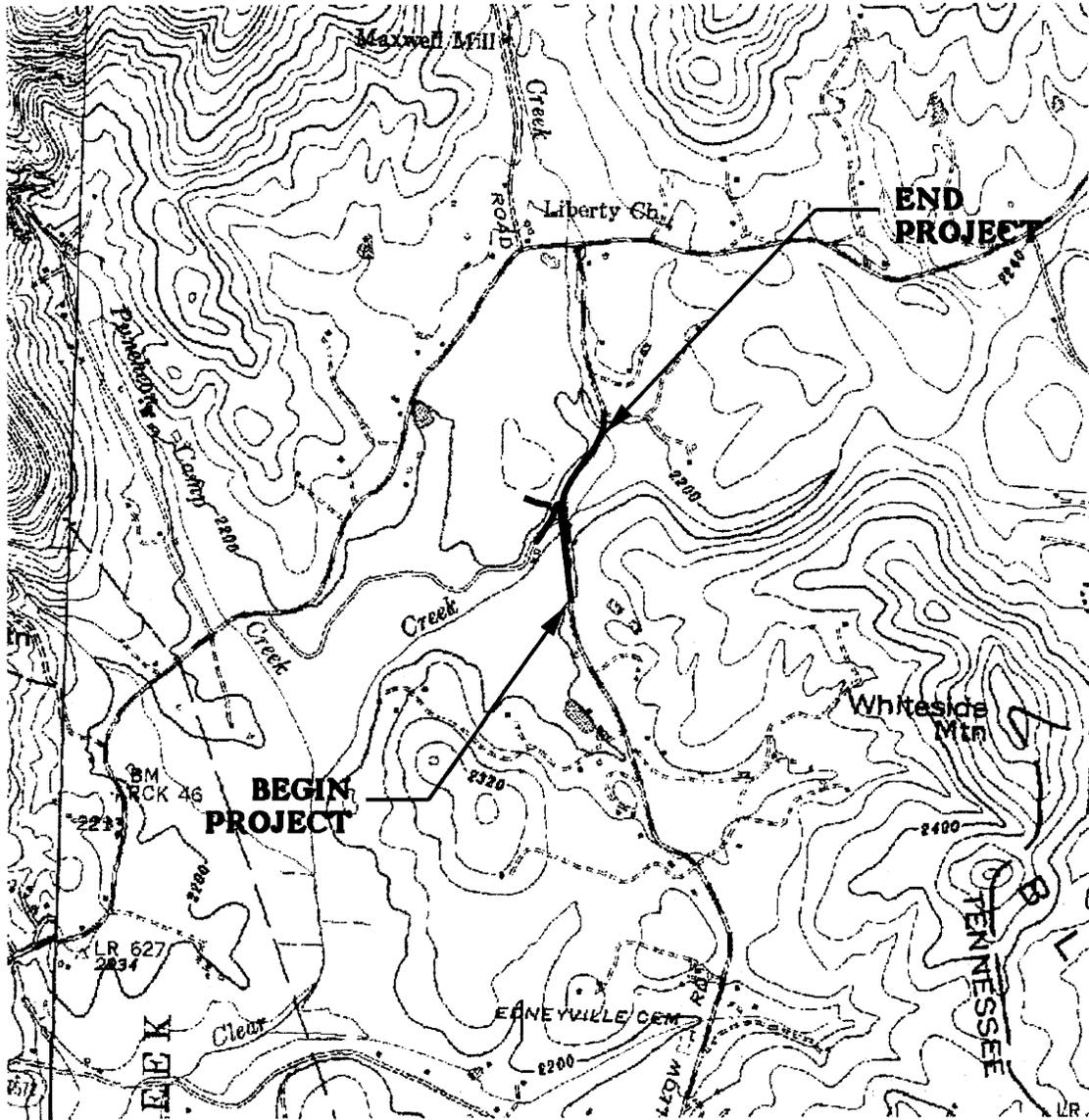
(Agent's signature is valid only if an authorization letter from the applicant is provided.)



SEE INSET BELOW



HENDERSON COUNTY



**WETLAND IMPACTS
VICINITY MAP**

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
HENDERSON COUNTY

PROJECT: 33498.1.1 (B-4149)
BRIDGE NO. 34 OVER
CLEAR CREEK ON SR 1587
(BEARWALLOW ROAD)

SHEET 1 OF 9

3-14-08

PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
5	LAVERNE SANDLIN	6050 SW 18TH COURT RD OCALA, FL 34474

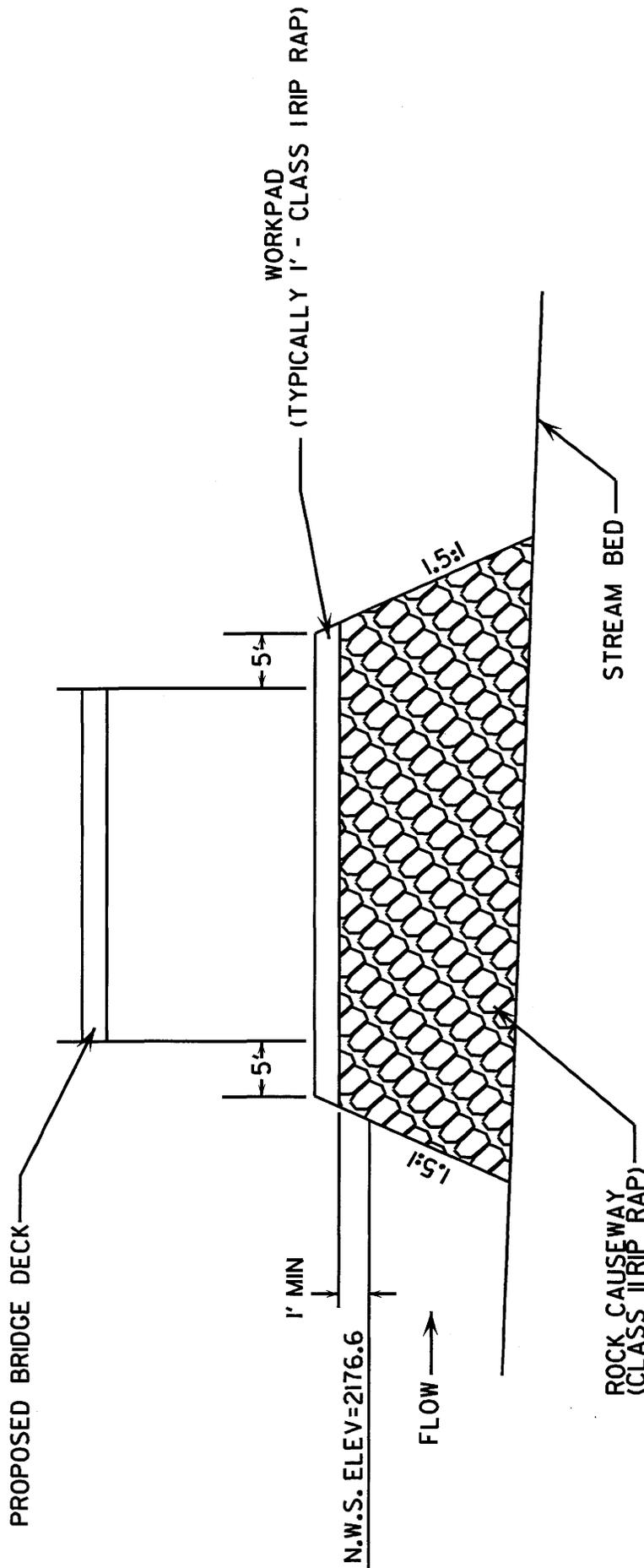
NCDOT

DIVISION OF HIGHWAYS

HENDERSON COUNTY

PROJECT: 33498.1.1 (B-4149)
BRIDGE NO. 34 OVER
CLEAR CREEK ON SR 1587
(BEARWALLOW ROAD)

WORKPAD DETAIL (NOT TO SCALE)



QUANTITIES OF ESTIMATES

VOLUME OF CLASS II RIP RAP= 350 yds³
 AREA OF CLASS II RIP RAP= 0.03 ac
 Estimate 520 Tons Class II Rip Rap

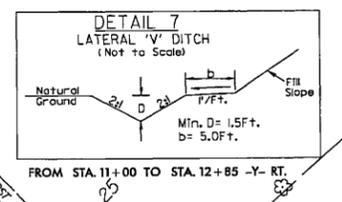
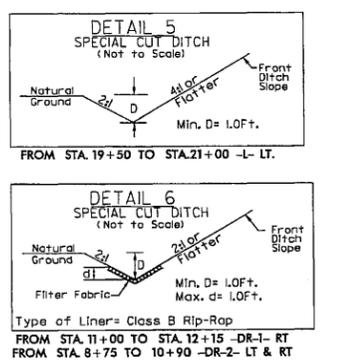
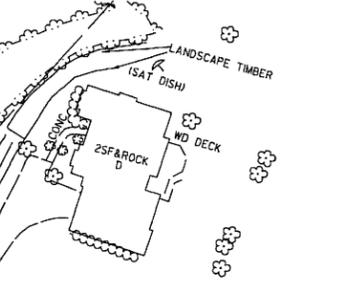
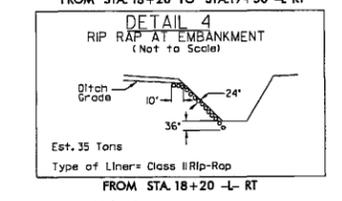
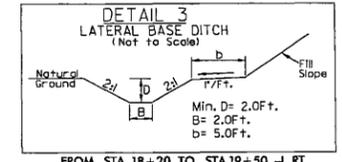
N.C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 HENDERSON COUNTY

PROJECT: 33498.1.1 (B-4149)
 BRIDGE NO. 34 OVER
 CLEAR CREEK ON SR 1587
 (BEARWALLOW ROAD)

SHEET 4 OF 9 3-14-08

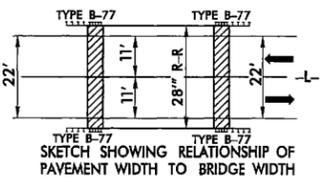
V&M
Vaughan & Melton
Consulting Engineers
Middleboro, Kentucky
Greenville, Tennessee
Asheville, North Carolina

PROJECT REFERENCE NO. B-4149	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER Permit Drawing Sheet 6 of 9	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

SS DENOTES IMPACTS IN SURFACE WATER



6" DIAM. PVC DECK DRAINS REQUIRED
STA 16+72 TO STA 17+10 -L- RT AND
STA 17+91 TO STA 18+33 -L- LT
SPACED 6' O.C.

FRANCIS J JR &
JOAN W COSTERISAN
DB. 877 PG 646

POWER
DUKE POWER
825 SPARTANBURG HWY
HENDERSONVILLE, NC
(828) 697-3400
TELEPHONE
BELL SOUTH CORP
24 O' HENRY AVE #301
ASHEVILLE, NC
(828) 257-2182

6
WILLIAM D CORNWELL
DB. 765 PG 767

5
LAVERNE SANDLIN
& LARRY GRIFFIN
DB. 1103 PG 135

NC GRID
NAD 83

7
THOMAS E &
BILLYE B DAZEVEDO
DB. 811 PG 25

SITE 1

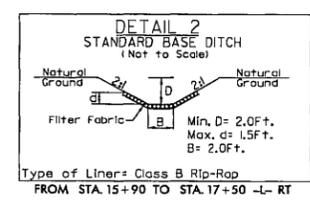
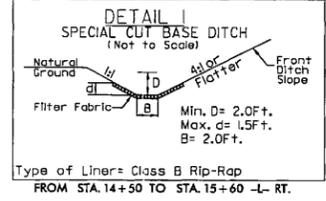
3
LECA BRADLEY HARRIS
DB. 673 PG 285

5
LAVERNE SANDLIN
& LARRY GRIFFIN
DB. 1103 PG 135

FLORENCE C &
GEORGE MINER/TRUSTEES
DB. 938 PG 505

FLORENCE C &
GEORGE MINER/TRUSTEES
DB. 938 PG 505

NO MORE THAN HALF OF
THE STREAM SHALL BE
IMPACTED BY WORKPAD
AT A TIME



PAVEMENT REMOVAL

SEE SHEET 5 FOR -L- & -Y- PROFILES
SEE SHEET 6 FOR -DR-1- & -DR-2- PROFILES

* V = 40 mph
** V = 15 mph

PI Sta 13+81.21
Δ = 0° 17' 44.5" (LT)
D = 0° 34' 22.6"
L = 51.61'
T = 25.80'
R = 10,000.00'
SE = NC
RO = N/A

PI Sta 19+52.86
Δ = 33° 52' 42.3" (RT)
D = 1° 48' 48.8"
L = 286.78'
T = 147.72'
R = 485.00'
SE = 0.06
RO = 153

PI Sta 22+23.91
Δ = 11° 35' 42.6" (RT)
D = 4° 24' 26.5"
L = 263.09'
T = 131.99'
R = 1,300'
SE = RC
RO = N/A

PI Sta 26+29.03
Δ = 27° 03' 59.2" (LT)
D = 8° 25' 33.1"
L = 321.23'
T = 163.67'
R = 680.00'

PI Sta 10+45.00
Δ = 4° 50' 31.6" (LT)
D = 9° 32' 57.5"
L = 50.71'
T = 25.37'
R = 600.00'
SE = 0.02
RO = 36

PI Sta 13+01.68
Δ = 20° 49' 56.0" (LT)
D = 11° 27' 33.0"
L = 181.80'
T = 91.91'
R = 500.00'
SE = 0.06
RO = 108

PI Sta 14+28.54
Δ = 85° 29' 47.4" (RT)
D = 143° 14' 22.0"
L = 59.69'
T = 36.97'
** R = 40.00'
SE = 0.01
RO = 18

PI Sta 10+41.04
Δ = 90° 00' 00.0" (LT)
D = 190° 59' 09.4"
L = 47.12'
T = 30.00'
R = 30.00'

PI Sta 11+67.67
Δ = 44° 53' 36.4" (RT)
D = 63° 39' 43.1"
L = 70.52'
T = 37.18'
R = 90.00'

PI Sta 9+41.13
Δ = 14° 35' 13.7" (LT)
D = 21° 13' 14.4"
L = 68.74'
T = 34.56'
R = 270.00'

PI Sta 10+34.57
Δ = 40° 07' 57.4" (RT)
D = 63° 39' 43.1"
L = 63.04'
T = 32.88'
R = 90.00'

REVISIONS

8/17/99

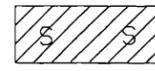
B/17/99



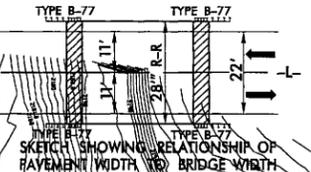
PROJECT REFERENCE NO.	SHEET NO.
B-4149	4
RW SHEET NO.	
ROADWAY DESIGN	HYDRAULICS ENGINEER
Permit Drawing	
Sheet 7 of 9	
PRELIMINARY PLANS	
DO NOT USE FOR CONSTRUCTION	



DENOTES TEMPORARY IMPACTS IN SURFACE WATER



DENOTES IMPACTS IN SURFACE WATER



SKETCH SHOWING RELATIONSHIP OF PAVEMENT WIDTH TO BRIDGE WIDTH

6" DIA. PVC DECK DRAINS REQUIRED STA 16+92 TO STA 17+10 -L- RT AND STA 17+91 TO STA 18+33 -L- RT. SPACER 6' O.C.

POWER DUKE POWER 825 SPARTANBURG HWY RENDERSVILLE, NC (828) 937-3400
TELEPHONE BELL SOUTH CORP 24 O' HENRY AVE #301 ASHEVILLE, NC (828) 257-2182

WILLIAM D SORNWELL DB. 785 PG 767

LAVERNE SANDLIN & LARRY GRIFFIN DB. 1103 PG 135

NC GRID NAD 83

THOMAS E & BILLYE B DAZEVEDO DB. 94 PG 75

WAYNE T & ANN NIX DB. 740 PG 21

PEARL W & ANN T REGHAM DB. 730 PG 84

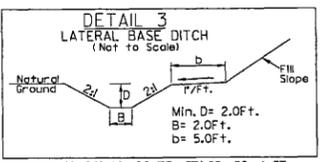
BEGIN BRIDGE STA 16+33.00

BEGIN APPR SLAB STA 16+39.36

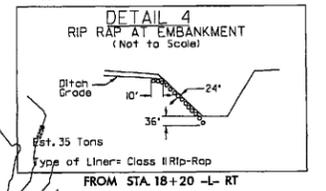
END APPR SLAB STA 18+31.43

END BRIDGE STA 18+18.00

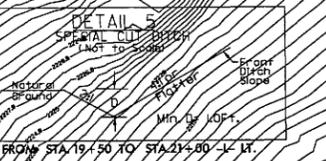
NO MORE THAN HALF OF THE STREAM SHALL BE IMPACTED BY WORKPAD AT A TIME



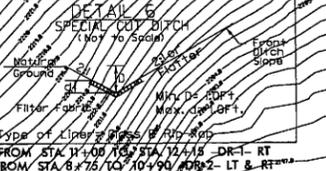
DETAIL 3 LATERAL BASE DITCH (Not to Scale)



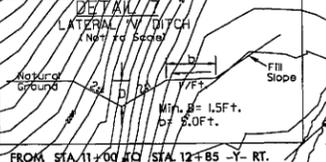
DETAIL 4 RIP RAP AT EMBANKMENT (Not to Scale)



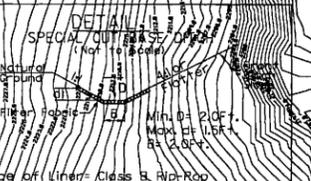
DETAIL 5 SPECIAL CUT DITCH (Not to Scale)



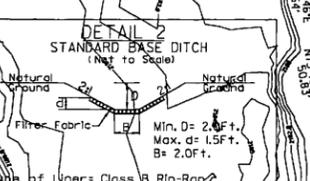
DETAIL 6 SPECIAL CUT DITCH (Not to Scale)



DETAIL 7 LATERAL V DITCH (Not to Scale)



DETAIL 8 STANDARD BASE DITCH (Not to Scale)



DETAIL 9 STANDARD BASE DITCH (Not to Scale)

$\Delta = 0^{\circ}17'44.5''$ (LT)
 $\Delta = 33^{\circ}52'42.3''$ (RT)
 $D = 0^{\circ}34'22.6''$
 $L = 515.4'$
 $T = 25.80'$
 $R = 10,000.0'$
 $SE = NC$
 $RO = N/A$

$\Delta = 27^{\circ}03'59.2''$ (LT)
 $\Delta = 24^{\circ}24'36.4''$ (RT)
 $D = 8^{\circ}24'33.1''$
 $L = 263.00'$
 $T = 13.99'$
 $R = 1300'$
 $SE = NC$
 $RO = N/A$

$\Delta = 10^{\circ}49'56.0''$ (LT)
 $\Delta = 11^{\circ}27'33.0''$ (RT)
 $D = 8^{\circ}32'47.5''$
 $L = 80.77'$
 $T = 25.31'$
 $R = 600.00'$
 $SE = NC$
 $RO = N/A$

$\Delta = 14^{\circ}36'17.7''$ (LT)
 $\Delta = 24^{\circ}24'36.4''$ (RT)
 $D = 8^{\circ}24'33.1''$
 $L = 263.00'$
 $T = 13.99'$
 $R = 1300'$
 $SE = NC$
 $RO = N/A$

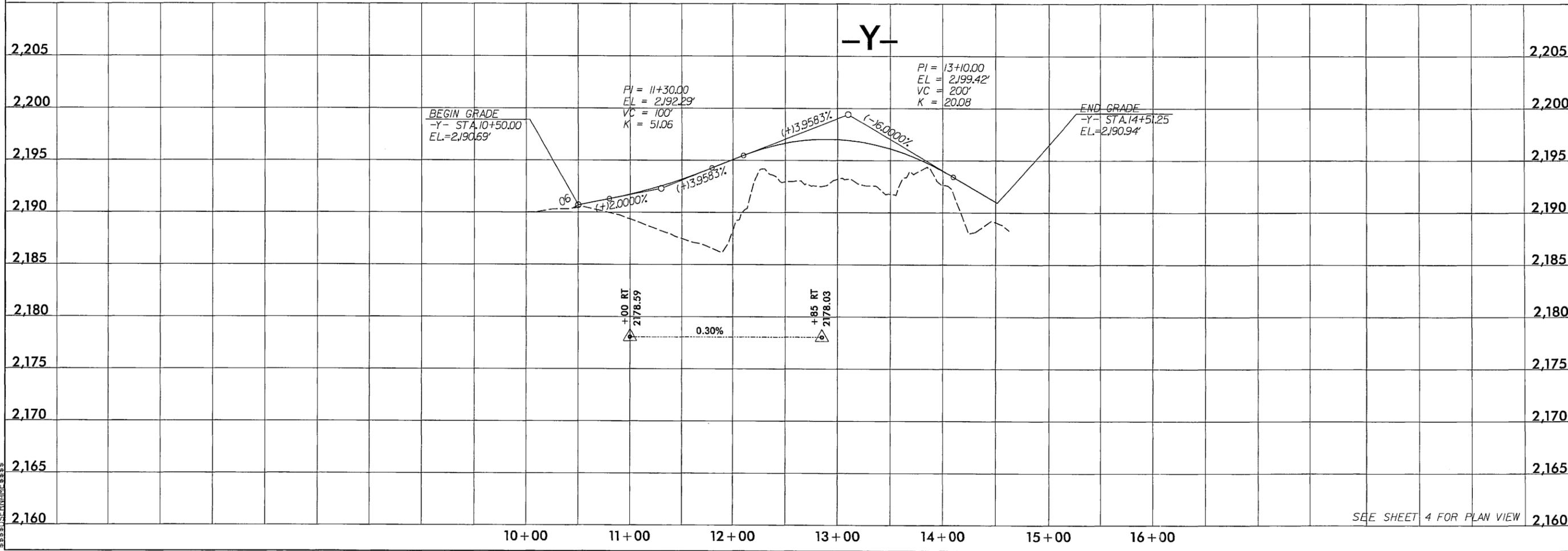
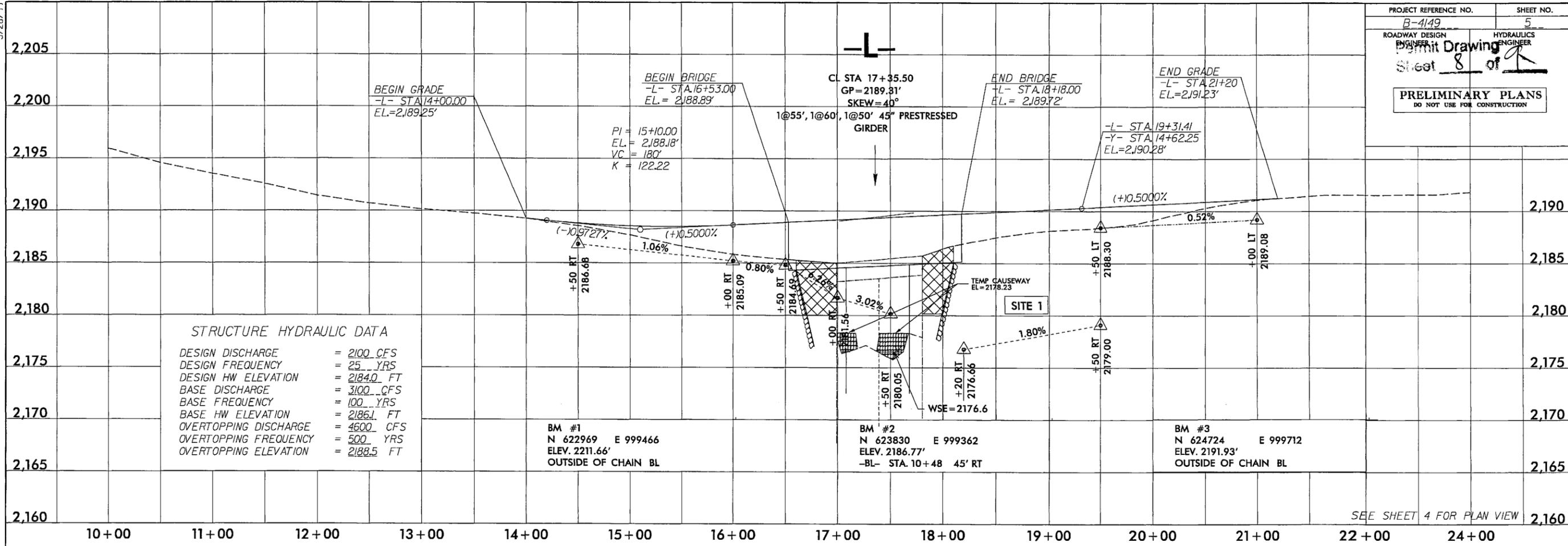
$\Delta = 99^{\circ}00'00.0''$ (LT)
 $\Delta = 97^{\circ}59'43.1''$ (RT)
 $D = 8^{\circ}24'33.1''$
 $L = 263.00'$
 $T = 13.99'$
 $R = 1300'$
 $SE = NC$
 $RO = N/A$

$\Delta = 14^{\circ}36'17.7''$ (LT)
 $\Delta = 24^{\circ}24'36.4''$ (RT)
 $D = 8^{\circ}24'33.1''$
 $L = 263.00'$
 $T = 13.99'$
 $R = 1300'$
 $SE = NC$
 $RO = N/A$

REVISIONS

SEE SHEET 5 FOR -L- & -R- PROFILES
SEE SHEET 6 FOR -DR-1- & -DR-2- PROFILES

5/28/99

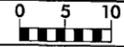


DATE TIME USER NAME

SEE SHEET 4 FOR PLAN VIEW

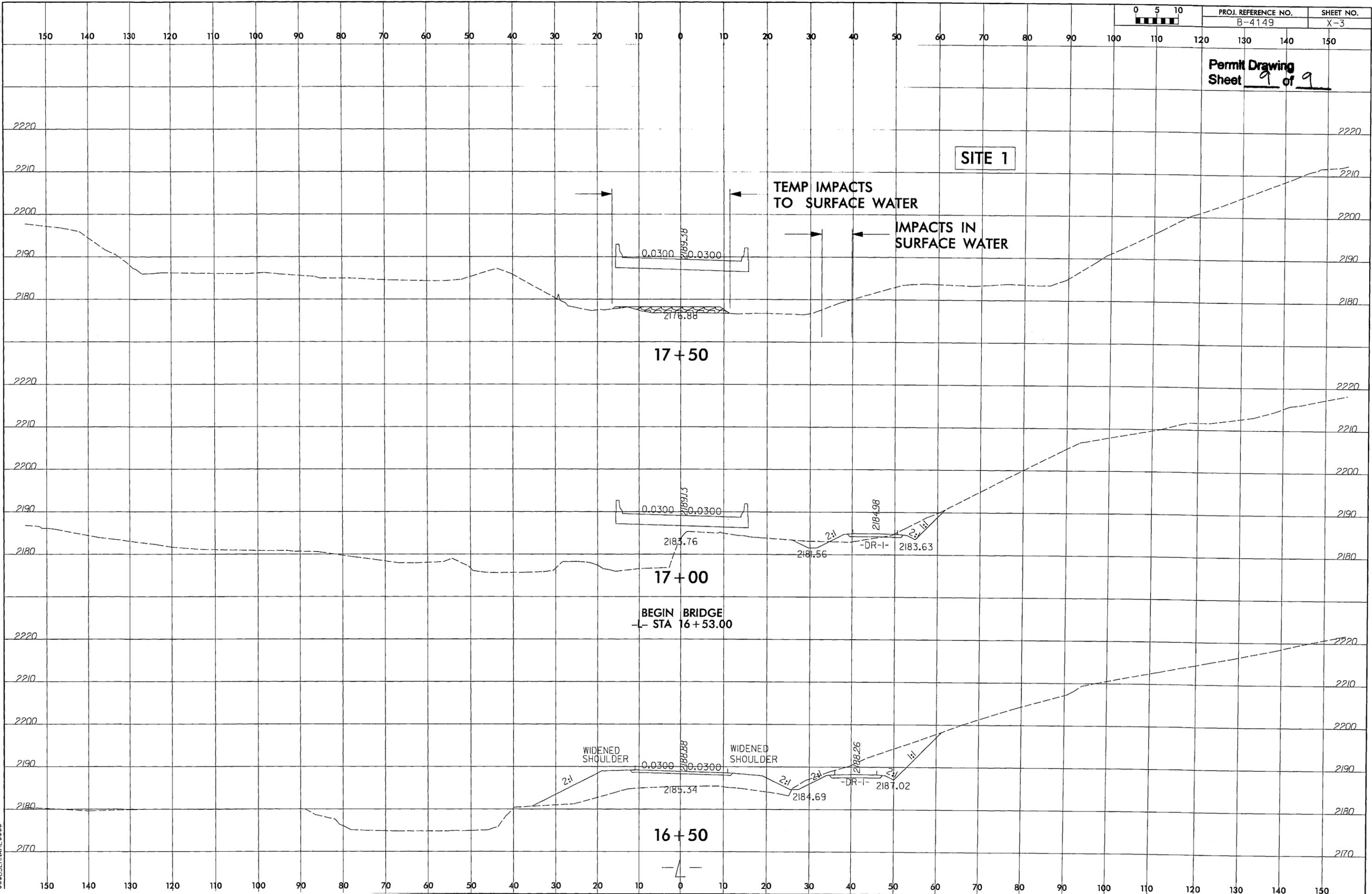
SEE SHEET 4 FOR PLAN VIEW

8/23/99



PROJ. REFERENCE NO.	SHEET NO.
B-4149	X-3

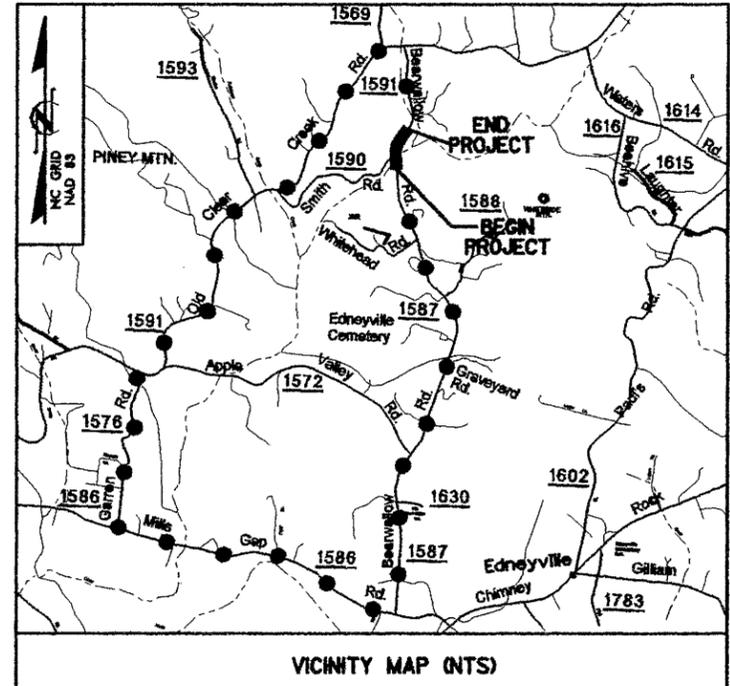
Permit Drawing
Sheet 9 of 9



SYSTEM NAME
PROJECT NAME
DRAWN BY
CHECKED BY
DATE

TIP PROJECT: B-4149

See Sheet 1-A For Index of Sheets



VICINITY MAP (NTS)

Proposed Detour

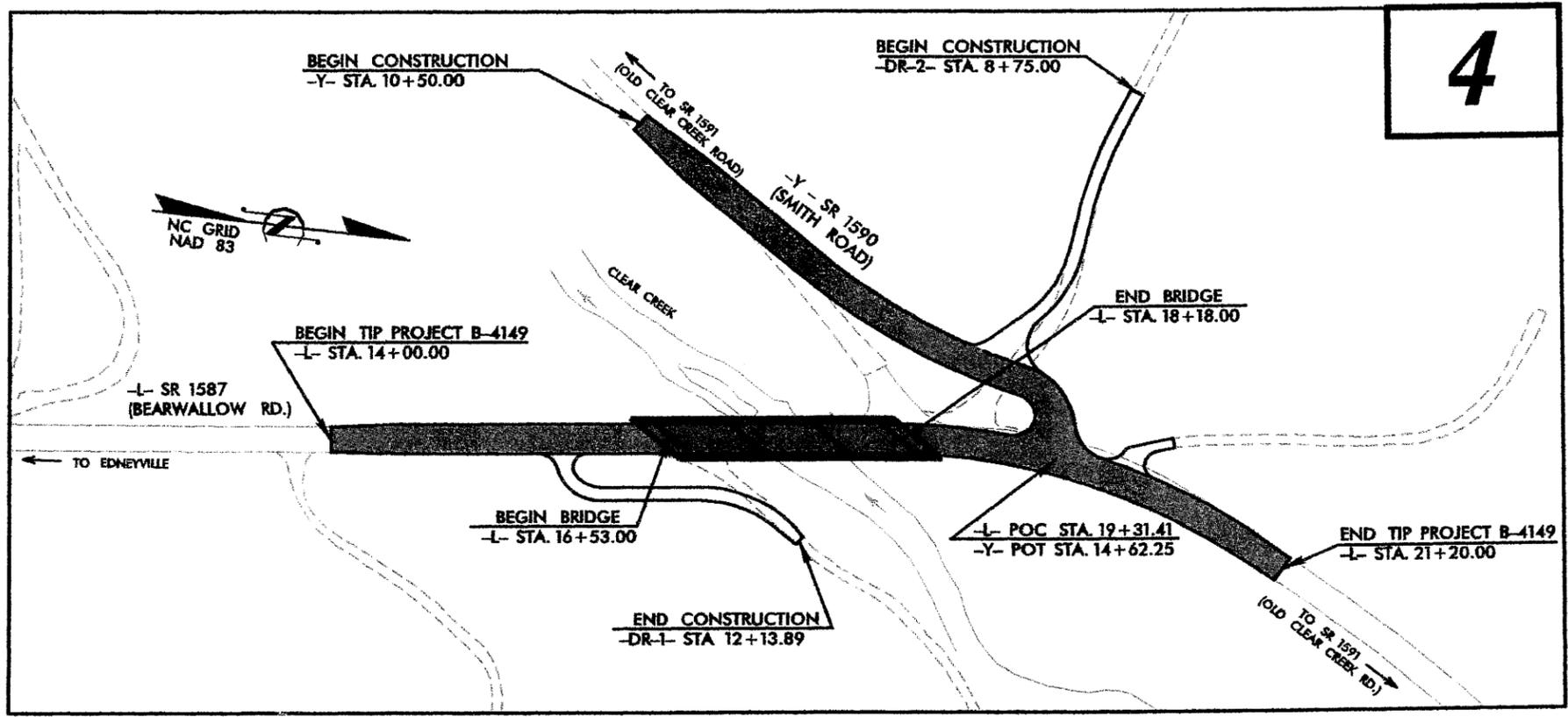
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

HENDERSON COUNTY

**LOCATION: BRIDGE No. 34 OVER CLEAR CREEK ON
SR 1587 (BEARWALLOW ROAD)**

TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURE

STATE	STATE PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
N.C.	B-4149	1	
TRACT NUMBER	P.L. NUMBER	DESCRIPTION	
33498.1.1	BRZ-1587(2)	P.E.	
33498.2.1	BRZ-1587(2)	RW, UTILITY	

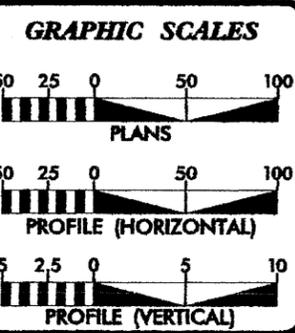


4

Clearing on this project shall be performed to the limits established by method II.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONTRACT:



DESIGN DATA

ADT 2009 = 500
ADT 2030 = 1,100
DHV = 10%
D = 60%
T = 3% (1% T1ST + 2% DUALS)
V = 55 MPH
FUNCT. CLASS = RURAL LOCAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4149 = 0.105 MI
LENGTH STRUCTURE TIP PROJECT B-4149 = 0.031 MI
TOTAL LENGTH OF TIP PROJECT B-4149 = 0.136 MI

Prepared in the Office of:
VAUGHN & MELTON
1318-F PATTON AVE.
ASHEVILLE, NC, 28806
FOR THE NORTH CAROLINA DIVISION OF HIGHWAYS

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JANUARY 18, 2008

LETTING DATE:
JANUARY 20, 2009

NC DOT CONTACT:
DOUG TAYLOR, PE
PROJECT ENGINEER - ROADWAY DESIGN

REECE SCHULER, PE
PROJECT ENGINEER

AARON CARVER, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

P.E.

ROADWAY DESIGN ENGINEER

P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER

\$\$\$\$\$ SYSTEM \$\$\$\$\$\$
\$\$\$\$\$ USERNAME \$\$\$\$\$\$

CONVENTIONAL PLAN SHEET SYMBOLS

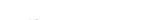
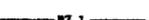
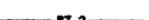
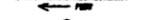
BOUNDARIES AND PROPERTY:

State Line	_____
County Line	_____
Township Line	_____
City Line	_____
Reservation Line	_____
Property Line	_____
Existing Iron Pin	_____ 
Property Corner	_____ 
Property Monument	_____ 
Parcel/Sequence Number	_____ 
Existing Fence Line	_____ 
Proposed Woven Wire Fence	_____ 
Proposed Chain Link Fence	_____ 
Proposed Barbed Wire Fence	_____ 
Existing Wetland Boundary	_____ 
Proposed Wetland Boundary	_____ 
Existing Endangered Animal Boundary	_____ 
Existing Endangered Plant Boundary	_____ 

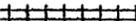
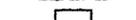
BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	_____ 
Sign	_____ 
Well	_____ 
Small Mine	_____ 
Foundation	_____ 
Area Outline	_____ 
Cemetery	_____ 
Building	_____ 
School	_____ 
Church	_____ 
Dam	_____ 

HYDROLOGY:

Stream or Body of Water	_____
Hydro, Pool or Reservoir	_____ 
Jurisdictional Stream	_____ 
Buffer Zone 1	_____ 
Buffer Zone 2	_____ 
Flow Arrow	_____ 
Disappearing Stream	_____ 
Spring	_____ 
Swamp Marsh	_____ 
Proposed Lateral, Tail, Head Ditch	_____ 
False Sump	_____ 

RAILROADS:

Standard Gauge	_____ 
RR Signal Milepost	_____ 
Switch	_____ 
RR Abandoned	_____ 
RR Dismantled	_____ 

RIGHT OF WAY:

Baseline Control Point	_____ 
Existing Right of Way Marker	_____ 
Existing Right of Way Line	_____ 
Proposed Right of Way Line	_____ 
Proposed Right of Way Line with Iron Pin and Cap Marker	_____ 
Proposed Right of Way Line with Concrete or Granite Marker	_____ 
Existing Control of Access	_____ 
Proposed Control of Access	_____ 
Existing Easement Line	_____ 
Proposed Temporary Construction Easement	_____ 
Proposed Temporary Drainage Easement	_____ 
Proposed Permanent Drainage Easement	_____ 
Proposed Permanent Utility Easement	_____ 

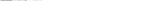
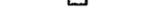
ROADS AND RELATED FEATURES:

Existing Edge of Pavement	_____
Existing Curb	_____
Proposed Slope Stakes Cut	_____ 
Proposed Slope Stakes Fill	_____ 
Proposed Wheel Chair Ramp	_____ 
Proposed Wheel Chair Ramp Curb Cut	_____ 
Curb Cut for Future Wheel Chair Ramp	_____ 
Existing Metal Guardrail	_____ 
Proposed Guardrail	_____ 
Existing Cable Guiderail	_____ 
Proposed Cable Guiderail	_____ 
Equality Symbol	_____ 
Pavement Removal	_____ 

VEGETATION:

Single Tree	_____ 
Single Shrub	_____ 
Hedge	_____ 
Woods Line	_____ 
Orchard	_____ 
Vineyard	_____ 

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	_____ 
Bridge Wing Wall, Head Wall and End Wall	_____ 
MINOR:	
Head and End Wall	_____ 
Pipe Culvert	_____ 
Footbridge	_____ 
Drainage Box: Catch Basin, DI or JB	_____ 
Paved Ditch Gutter	_____ 
Storm Sewer Manhole	_____ 
Storm Sewer	_____ 

UTILITIES:

POWER:	
Existing Power Pole	_____ 
Proposed Power Pole	_____ 
Existing Joint Use Pole	_____ 
Proposed Joint Use Pole	_____ 
Power Manhole	_____ 
Power Line Tower	_____ 
Power Transformer	_____ 
U/G Power Cable Hand Hole	_____ 
H-Frame Pole	_____ 
Recorded U/G Power Line	_____ 
Designated U/G Power Line (S.U.E.*)	_____ 

TELEPHONE:

Existing Telephone Pole	_____ 
Proposed Telephone Pole	_____ 
Telephone Manhole	_____ 
Telephone Booth	_____ 
Telephone Pedestal	_____ 
Telephone Cell Tower	_____ 
U/G Telephone Cable Hand Hole	_____ 
Recorded U/G Telephone Cable	_____ 
Designated U/G Telephone Cable (S.U.E.*)	_____ 
Recorded U/G Telephone Conduit	_____ 
Designated U/G Telephone Conduit (S.U.E.*)	_____ 
Recorded U/G Fiber Optics Cable	_____ 
Designated U/G Fiber Optics Cable (S.U.E.*)	_____ 

WATER:

Water Manhole	_____ 
Water Meter	_____ 
Water Valve	_____ 
Water Hydrant	_____ 
Recorded U/G Water Line	_____ 
Designated U/G Water Line (S.U.E.*)	_____ 
Above Ground Water Line	_____ 

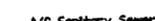
TV:

TV Satellite Dish	_____ 
TV Pedestal	_____ 
TV Tower	_____ 
U/G TV Cable Hand Hole	_____ 
Recorded U/G TV Cable	_____ 
Designated U/G TV Cable (S.U.E.*)	_____ 
Recorded U/G Fiber Optic Cable	_____ 
Designated U/G Fiber Optic Cable (S.U.E.*)	_____ 

GAS:

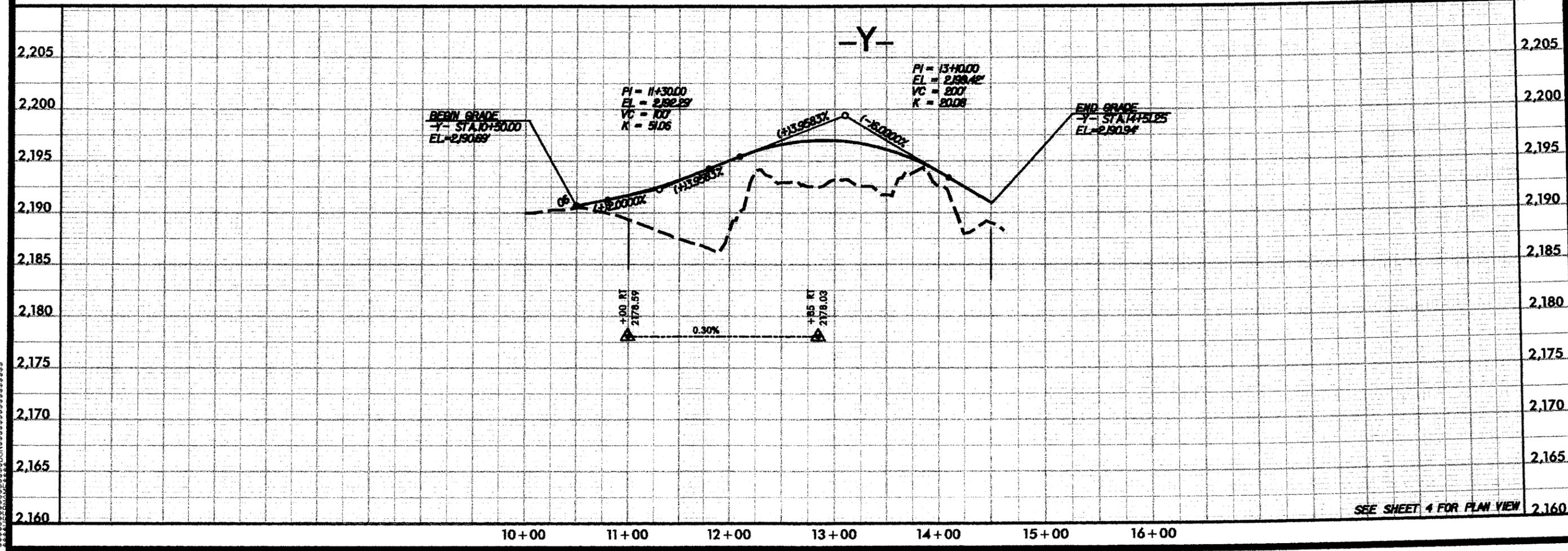
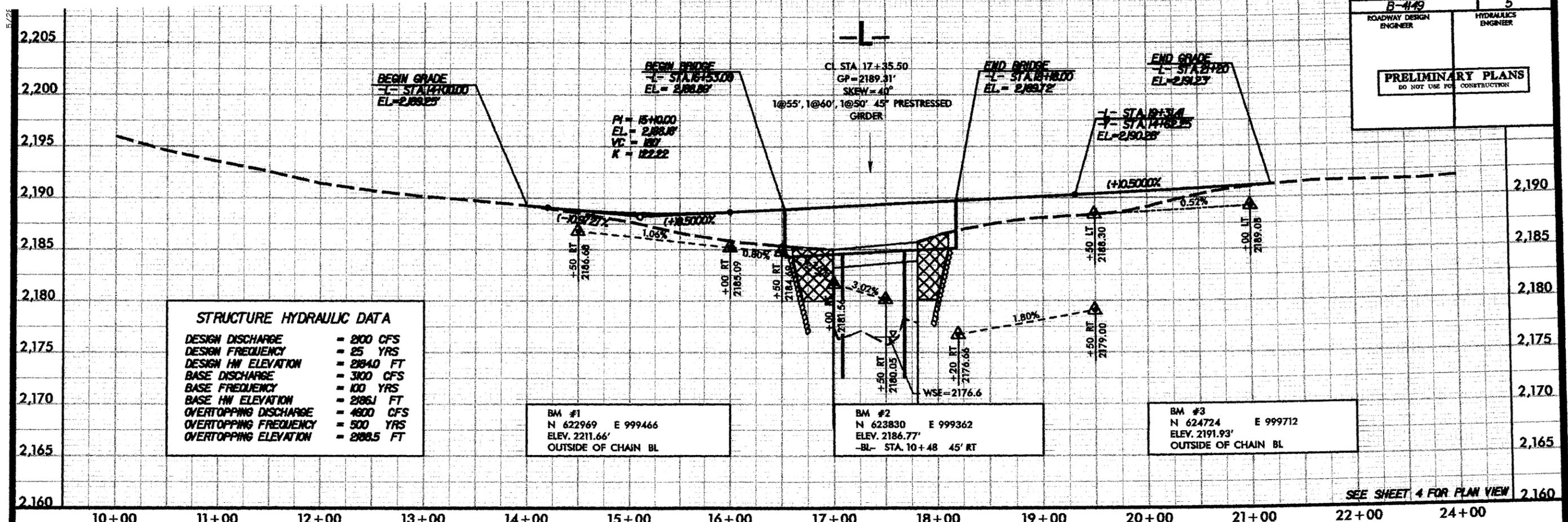
Gas Valve	_____ 
Gas Meter	_____ 
Recorded U/G Gas Line	_____ 
Designated U/G Gas Line (S.U.E.*)	_____ 
Above Ground Gas Line	_____ 

SANITARY SEWER:

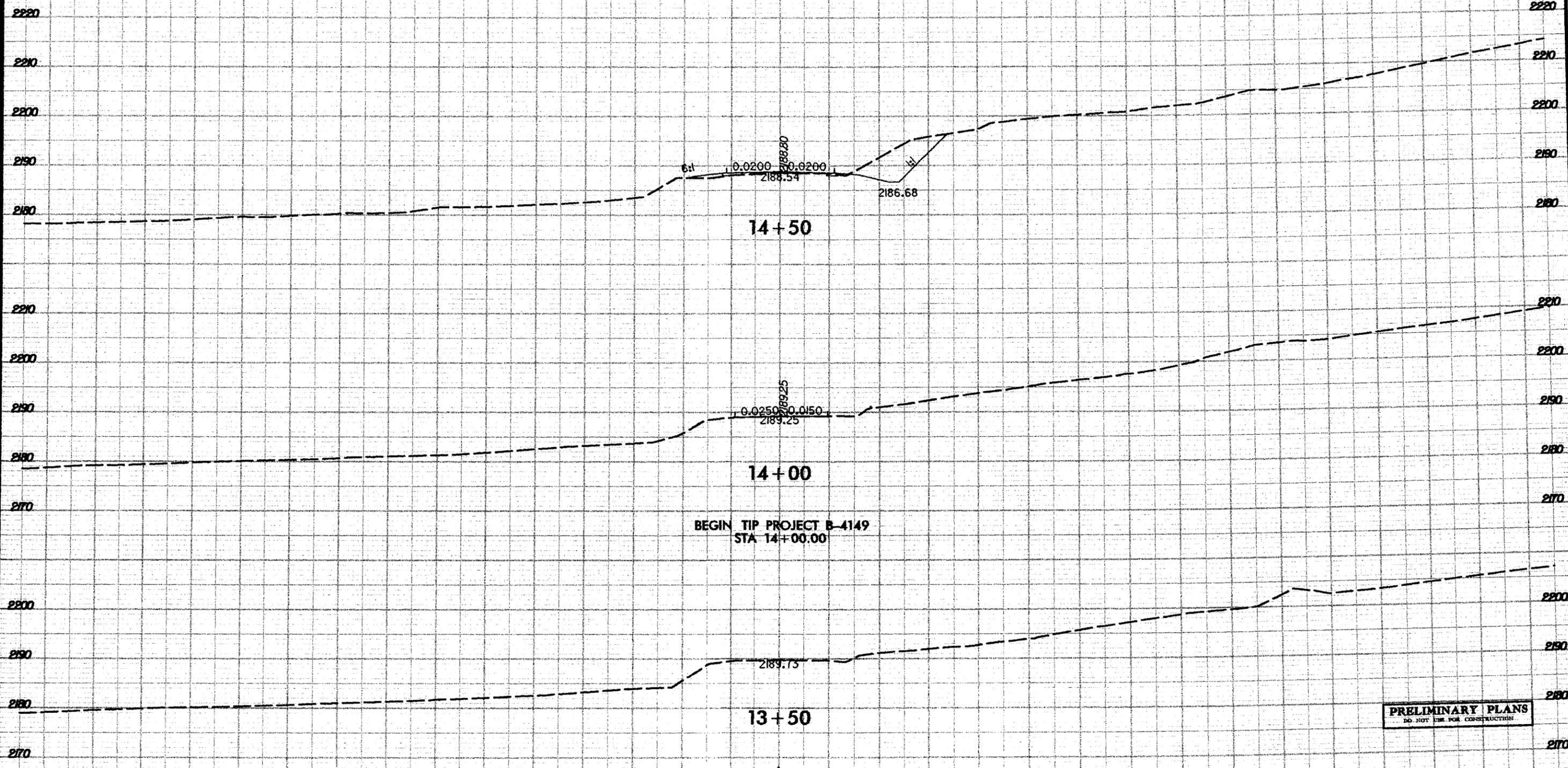
Sanitary Sewer Manhole	_____ 
Sanitary Sewer Cleanout	_____ 
U/G Sanitary Sewer Line	_____ 
Above Ground Sanitary Sewer	_____ 
Recorded SS Forced Main Line	_____ 
Designated SS Forced Main Line (S.U.E.*)	_____ 

MISCELLANEOUS:

Utility Pole	_____ 
Utility Pole with Base	_____ 
Utility Located Object	_____ 
Utility Traffic Signal Box	_____ 
Utility Unknown U/G Line	_____ 
U/G Tank; Water, Gas, Oil	_____ 
A/G Tank; Water, Gas, Oil	_____ 
U/G Test Hole (S.U.E.*)	_____ 
Abandoned According to Utility Records	_____ 
End of Information	_____ 

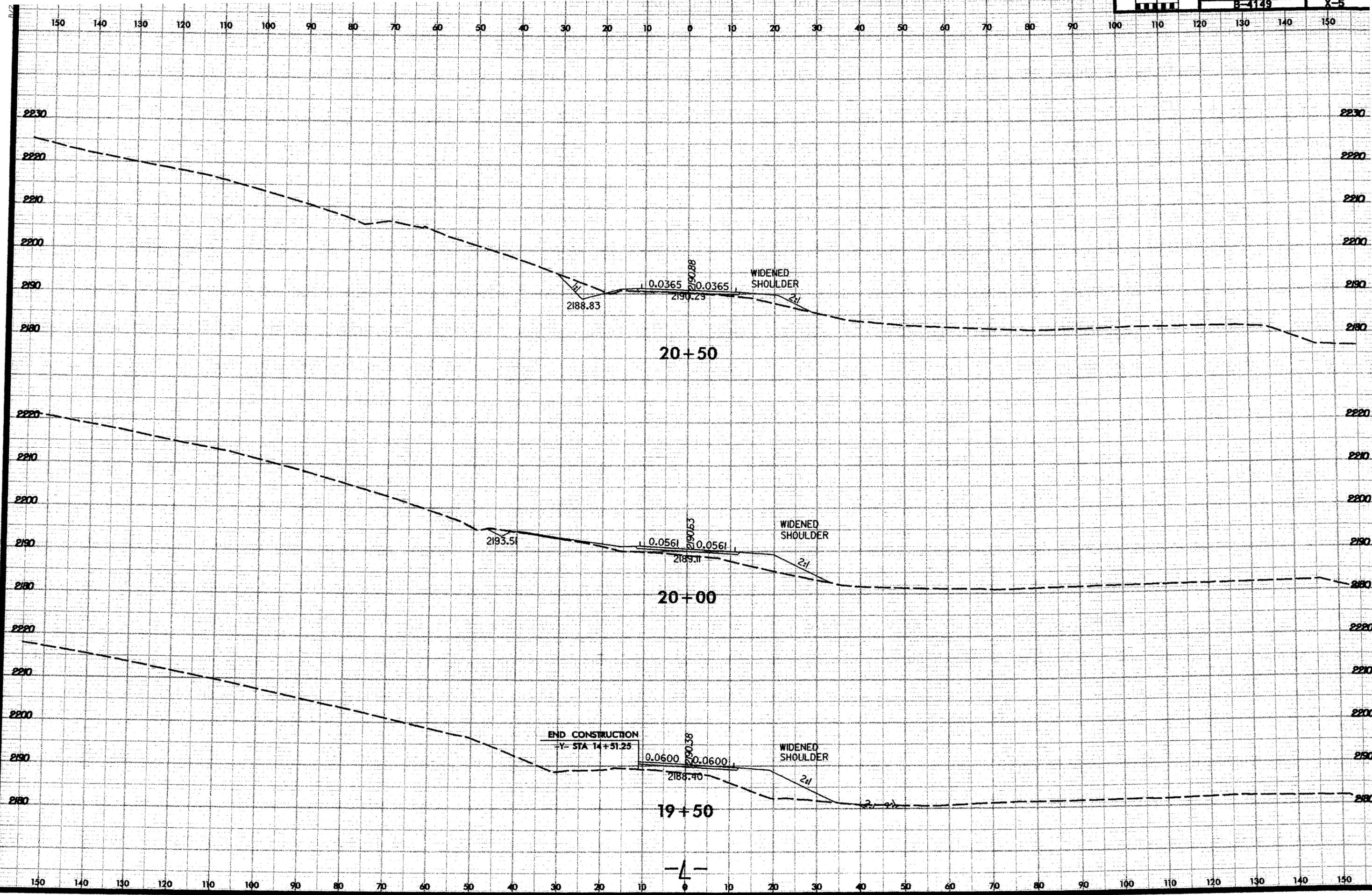


150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

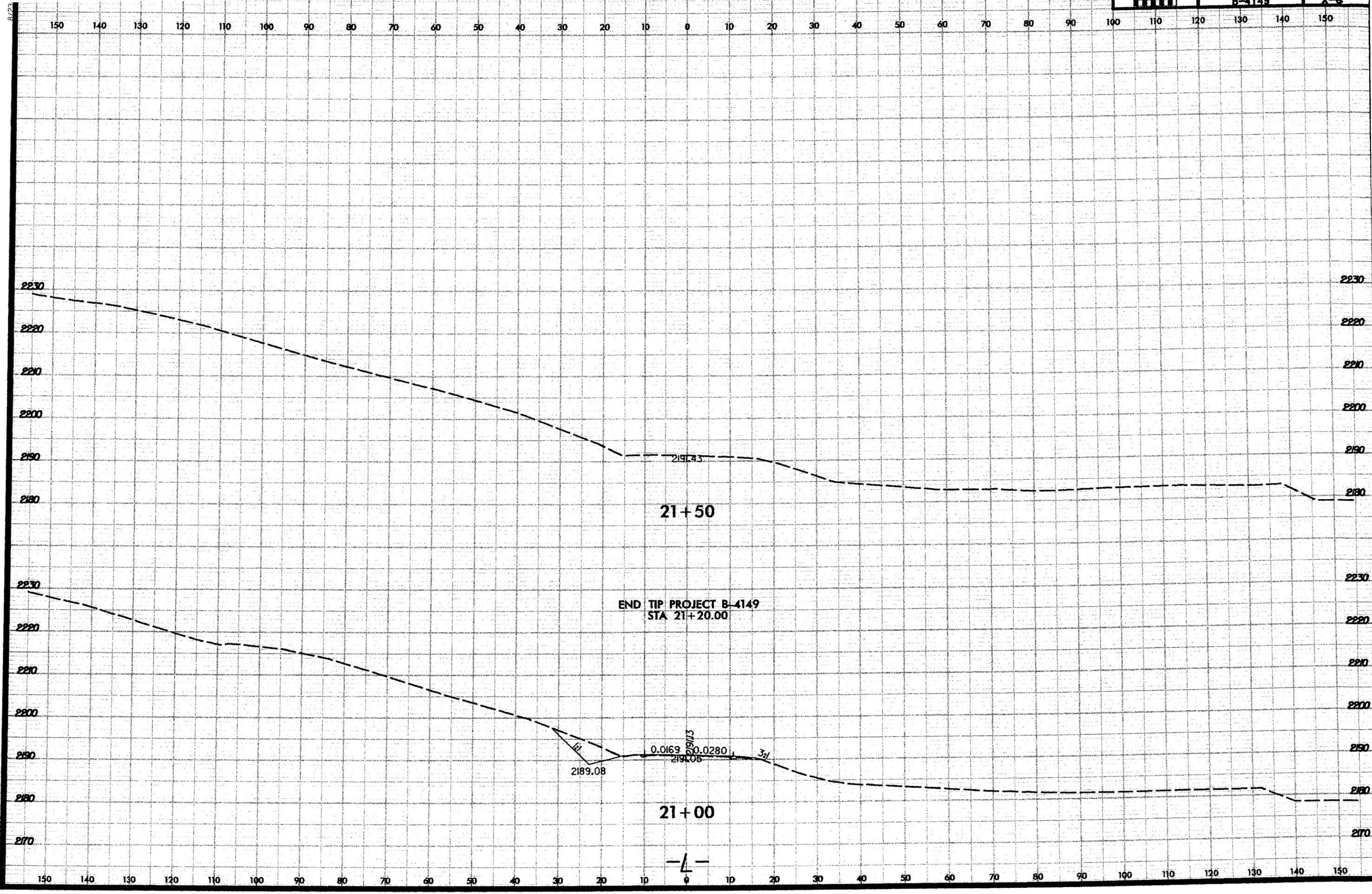


BEGIN TIP PROJECT B-4149
STA 14+00.00

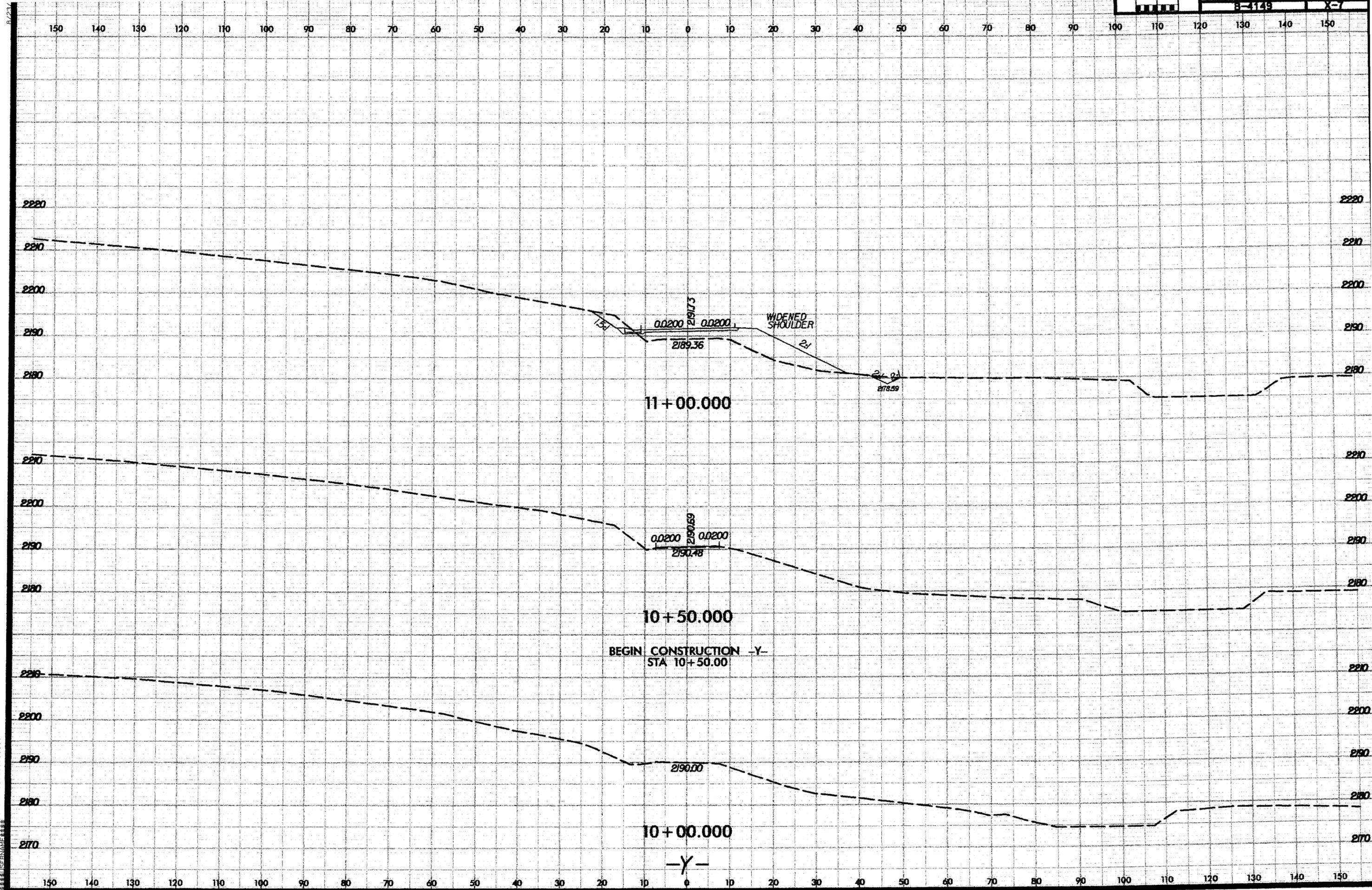
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



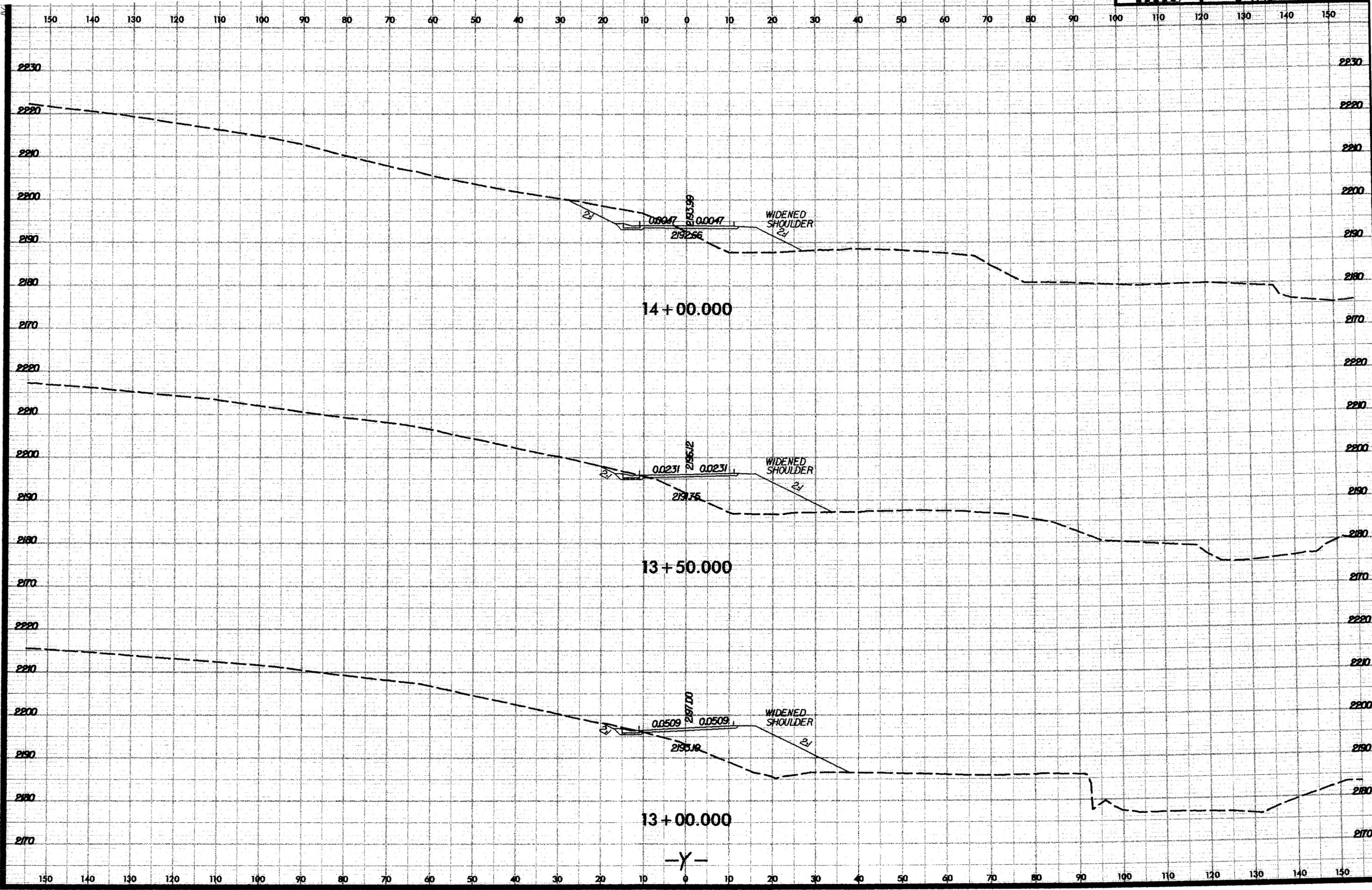
SYTIME
SERIAL
SERIAL



SYSTEM TIME: 11:11:11
SERIAL NUMBER: 111111



*****SYTIME****
*****CONSTRUCTION*****



SYSTEMS
DRAWING
USER NAME

