

INGHAM COUNTY ROAD COMMISSION

PLANS OF PROPOSED

INGHAM COUNTY PROJECT XXX XXXXXX

CEDAR STREET IMPROVEMENTS - HOLBROOK DRIVE TO COLLEGE ROAD
DELHI TOWNSHIP

PHASE II

THE IMPROVEMENTS COVERED BY THESE PLANS SHALL BE DONE IN ACCORDANCE WITH THE MICHIGAN DEPARTMENT OF TRANSPORTATION 2003 STANDARD SPECIFICATIONS FOR CONSTRUCTION AND SUPPLEMENTAL SPECIFICATIONS AND THE 2005 MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

THE PROPOSED IMPROVEMENTS COVERED BY THESE PLANS FOR RECONSTRUCTION ARE IN ACCORDANCE WITH THE AASHTO 2004 POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS.

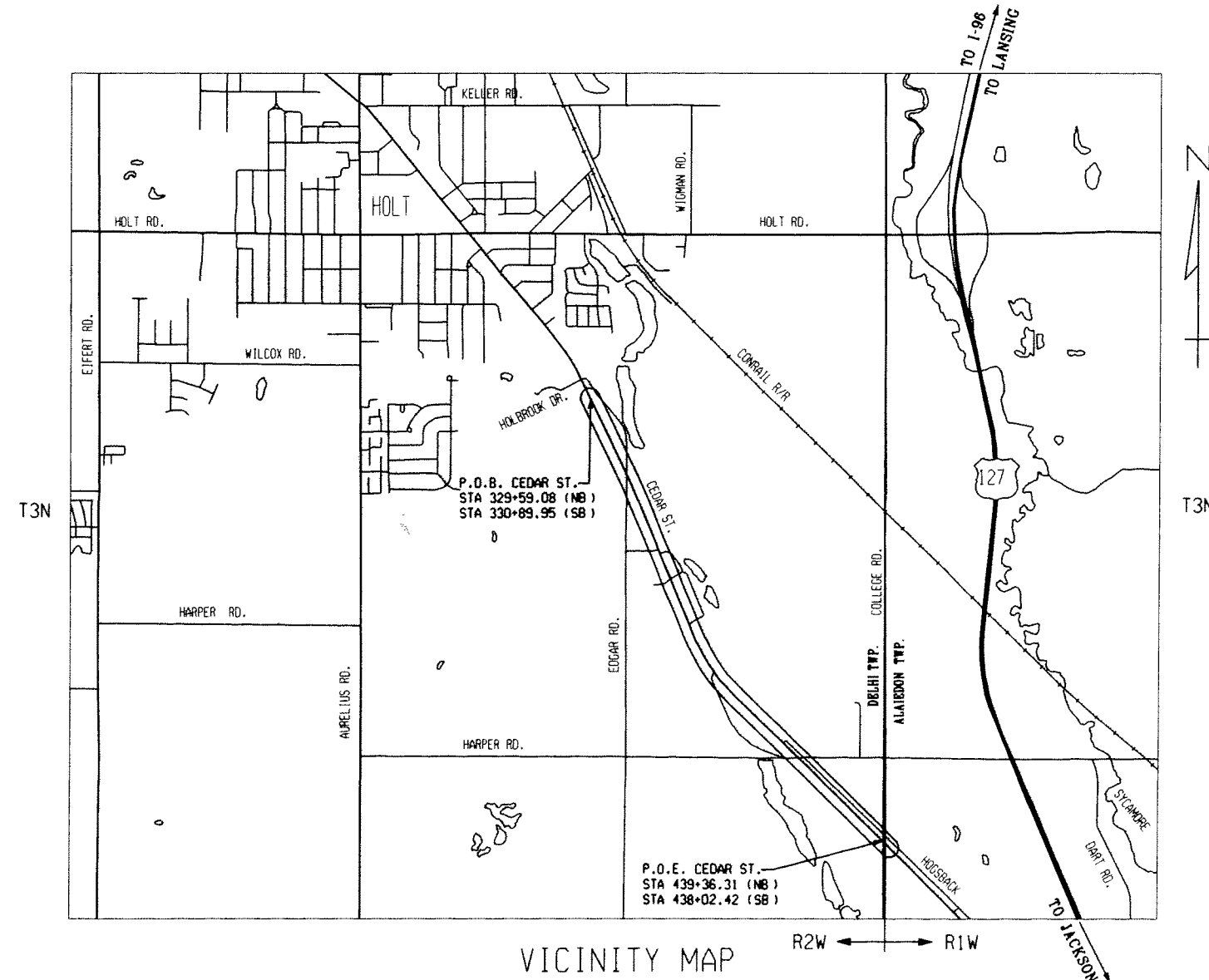
FOR PROTECTION OF UNDERGROUND UTILITIES, THE CONTRACTOR SHALL DIAL 1-800-482-7171 A MINIMUM OF 3 FULL WORKING DAYS PRIOR TO EXCAVATING IN THE VICINITY OF UTILITY LINES. ALL "MISS DIG" PARTICIPATING MEMBERS WILL THUS BE ROUTINELY NOTIFIED. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO MAY NOT BE PART OF THE "MISS DIG" ALERT SYSTEM.

CEDAR STREET	YEAR	
	2002	2025
A.D.T. _____	14,157	28,000
D.H.V. _____	1012	3300
COMM. % _____	2%	2%
POSTED SPEED _____	45 mph (HOLBROOK TO EDGAR)	55 mph (EDGAR TO COLLEGE)
DESIGN SPEED _____	50 mph (HOLBROOK TO EDGAR)	60 mph (EDGAR TO COLLEGE)

ESALS-1,410,000 (20 YEAR, FLEXIBLE)

DESIGN EXCEPTIONS: NONE

ROAD PLANS	SHEET NUMBERS
TITLE	1
TYPICAL SECTIONS	2-6
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LEGEND SHEET	9
ALIGNMENT SHEET	10-12
REMOVAL, CONSTRUCTION & PROFILE	13-54
DETAIL GRADES	55-59
MAINTAINING TRAFFIC PLAN	60-88
PAVEMENT MARKING AND SIGNING PLAN	89-98
LOG OF BORINGS	99-100



VICINITY MAP

SUBMITTED
6/4/09

(THIS SET NOT
PRINTED TO SCALE)

CONTRACT FOR: 2.1 MILES OF HMA RECONSTRUCTION, CONCRETE CURB AND GUTTER, STORM DRAINAGE, CULVERT REPLACEMENT, PERMANENT PAVEMENT MARKING AND RESTORATION.

INGHAM COUNTY ROAD COMMISSION	
JOSEPH A. GUENTHER	CHAIR
SHIRLEY M. RODGERS	VICE-CHAIR
THOMAS M. MITCHELL	MEMBER
JAMES DRAVENSTATT-MOCERI	MEMBER
NORMAN L. GEAR	MEMBER
WILLIAM M. CONKLIN, P.E.	MANAGING DIRECTOR

APPROVALS

ROBERT H. PETERSON, P.E. COUNTY HIGHWAY ENGINEER DATE

THESE PLANS WERE PREPARED FOR THE
INGHAM COUNTY ROAD COMMISSION
BY

Tt TETRA TECH

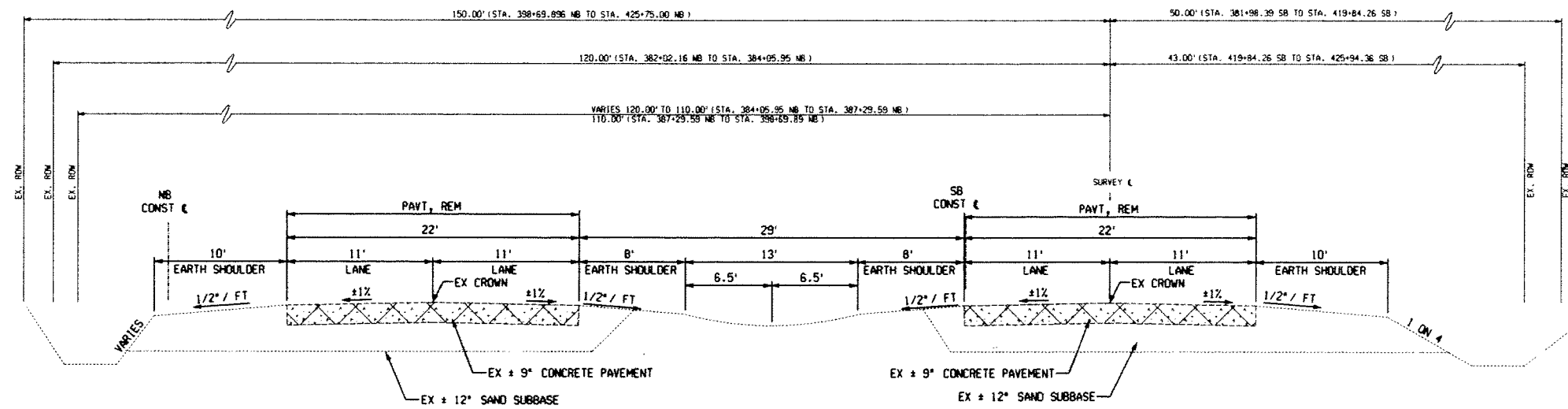
UNDER THE SUPERVISION OF

REGISTERED PROFESSIONAL ENGINEER DATE

CONTROL SECTION	JOB NUMBER	FEDERAL NUMBERS		SHEET NO.
		PROJECT	TRM	
STU		STP		1

CONTROL SECTION — JOB NUMBER: STU
 DATE: 08-12-02 CORRECTED BY: R. SLOVAK DATE: 4-06-09
 CHECKED BY: S. EMMONS DATE: 08-27-03
 DRAWN BY: B. LOBACH FILE NAME: TITLE.DGN

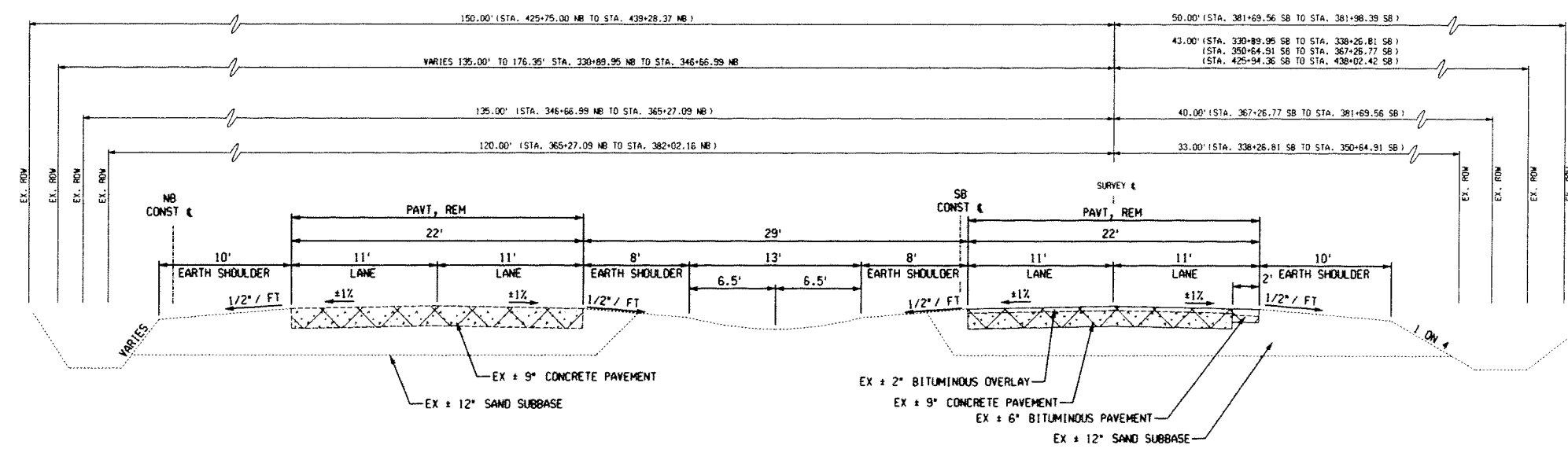
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61



EXISTING 4-LANE WITH MEDIAN TYPICAL SECTION

SCALE: 1"=5'

TO APPLY: STA. 381+98.39 SB TO STA. 425+94.36 SB
 STA. 382+02.16 NB TO STA. 425+75.00 NB

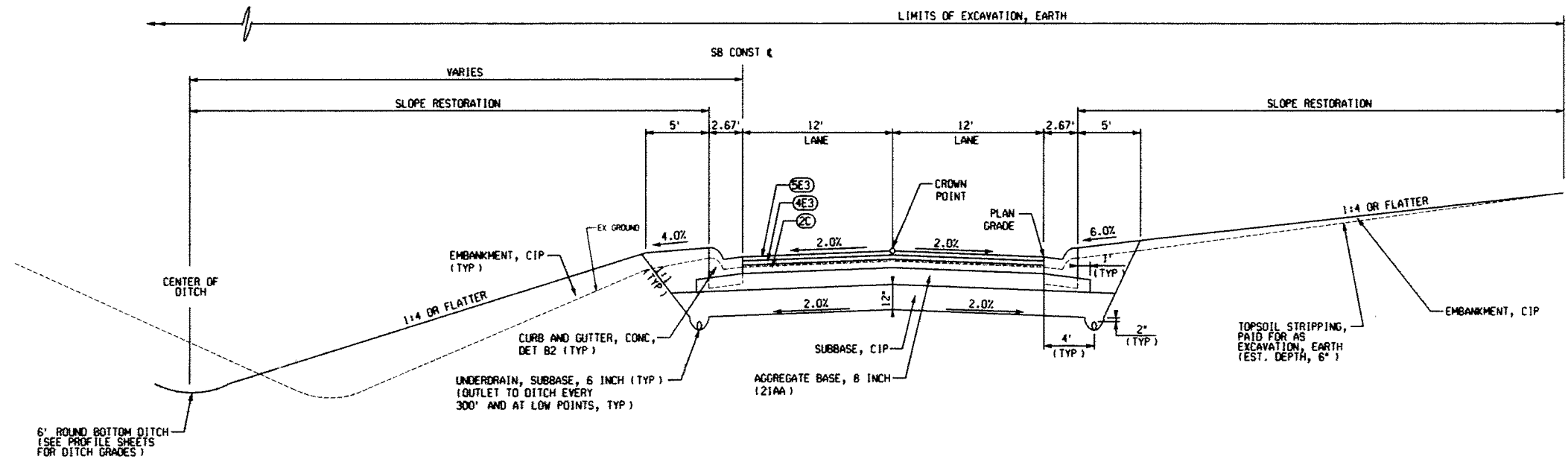


EXISTING 4-LANE WIDENED WITH MEDIAN TYPICAL SECTION

SCALE: 1"=5'

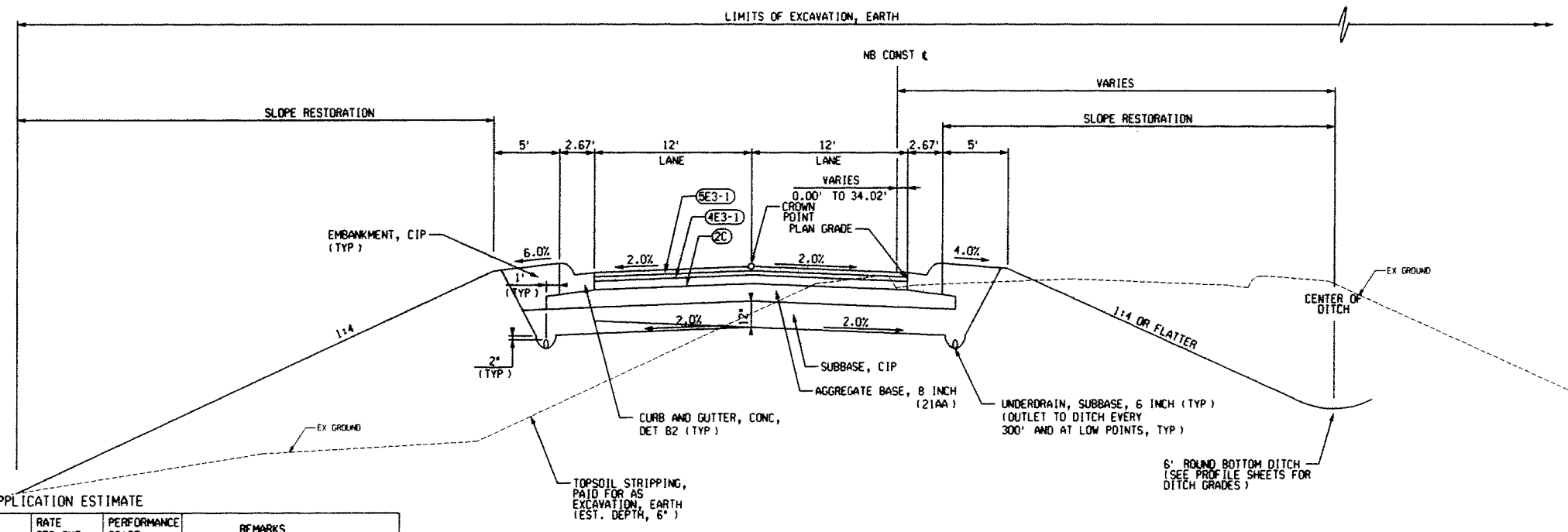
TO APPLY: STA. 330+89.95 SB TO STA. 381+98.39 SB
 STA. 329+59.16 NB TO STA. 382+02.16 NB
 STA. 425+94.36 SB TO STA. 438+02.42 SB (PDE)
 STA. 425+75.00 NB TO STA. 439+28.45 NB (PDE)

△				
△				
△				
△				
REV	DESCRIPTION	BY	DATE	CHK'D
DESIGNED	A. FLAK	CHECKED	AJL	
SCALE	AS NOTED	CADD DATE	04-16-09 AJF 03	
PART # 1200-12795-0001/CADD/SHEET FILES/30/TYPICALS1.DWG INGHAM COUNTY ROAD COMMISSION CEDAR STREET IMPROVEMENTS - HOLBROOK TO COLLEGE DELHI TOWNSHIP, MICHIGAN				
TYPICAL SECTIONS				
DIVISION	CONTRACT	SHEET		
	12795-09001-N-1	2		
		OF 100		



PROPOSED ROUNDABOUT DEPARTING HALF-SECTION

SCALE: 1"=5'
TO APPLY: STA. 330+89.95 SB TO STA. 332+00.00 SB



PROPOSED ROUNDABOUT APPROACH HALF-SECTION

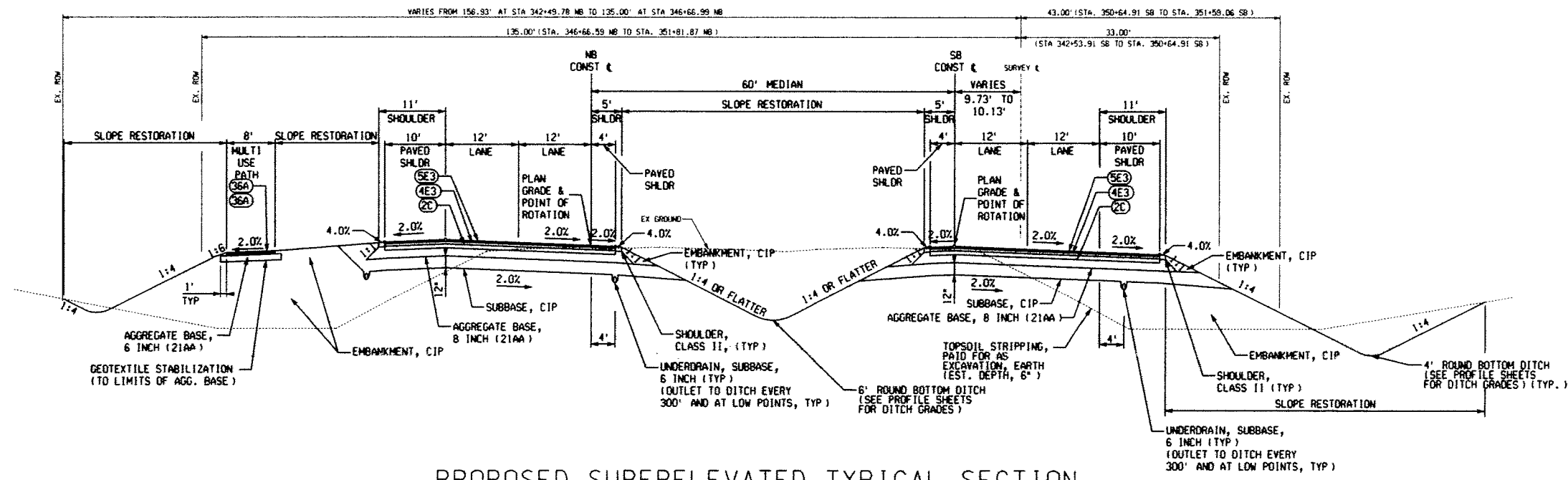
SCALE: 1"=5'
TO APPLY: STA. 329+59.16 NB TO STA. 332+00.00 NB

HMA APPLICATION ESTIMATE

IDENT NO.	ITEM	RATE PER SYD	PERFORMANCE GRADE	REMARKS
5E3	HOT MIX ASPHALT - 5E3	220*	64-28	WEARING COURSE (AWI-260)
4E3	HOT MIX ASPHALT - 4E3	220*	64-28	LEVELING COURSE
2C	HOT MIX ASPHALT - 2C	440*	64-28	BASE COURSE
5E3-1	HOT MIX ASPHALT - 5E3, HIGH STRESS	220*	70-28P	WEARING, HIGH STRESS (AWI-260)
4E3-1	HOT MIX ASPHALT - 4E3, HIGH STRESS	220*	70-28P	LEVELING, HIGH STRESS
13A	HMA APPROACH,	165*	58-28	HMA, 13A, WEARING (AWI-260)
13A	HMA APPROACH,	220*	58-28	HMA, 13A, LEVELING
36A	BICYCLE PATH, HMA	165*	58-28	TOP COURSE, 36A
36A	BICYCLE PATH, HMA	165*	58-28	LEVELING COURSE, 36A
	* BITUMINOUS BOND COAT	0-0.10 GAL		

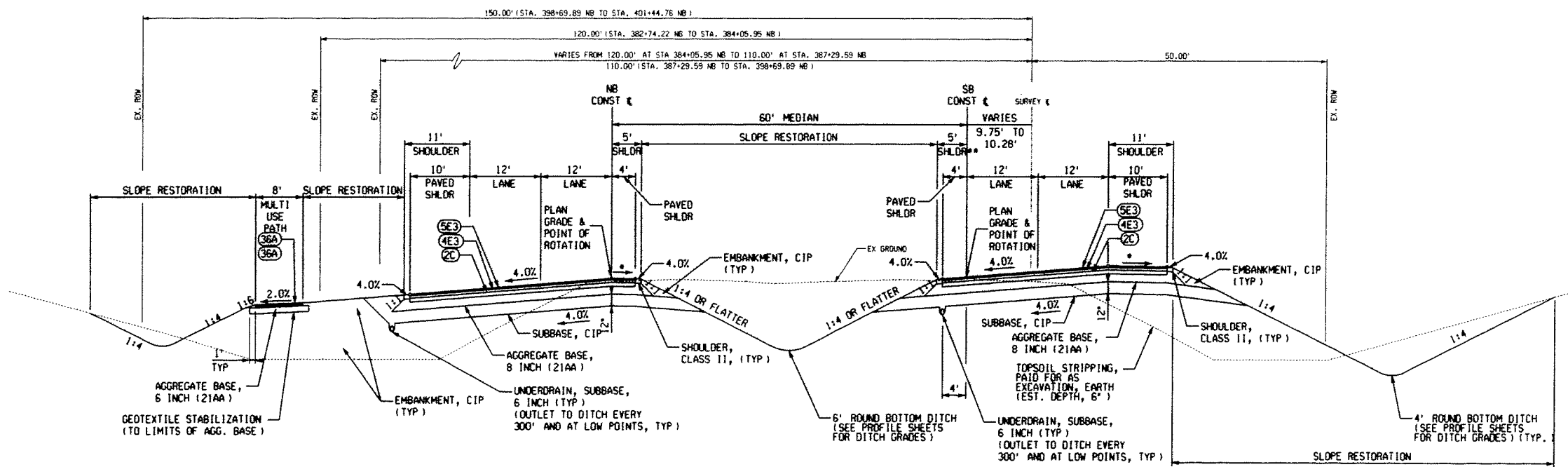
*FOR INFORMATION ONLY

DESIGNED	A. FLAK	CHECKED	AJL
SCALE	AS NOTED	GRID DATE	04-18-09 AJF BS
PART OF 200-12795-0001/CAD/SHEET FILES/TYPICALS.DWG			
INGHAM COUNTY ROAD COMMISSION CEDAR STREET IMPROVEMENTS - HOLBROOK TO COLLEGE DELMONT TOWNSHIP, MICHIGAN			
TYPICAL SECTIONS			
DIVISION	CONTRACT	SHEET	
	12795-09001-N-1	3	
		OF 100	



PROPOSED SUPERELEVATED TYPICAL SECTION

TO APPLY: STA. 342+49.78 NB TO STA. 351+81.87 NB (INCLUDING TRANSITIONS)
 STA. 342+53.91 SB TO STA. 351+59.06 SB (INCLUDING TRANSITIONS)



PROPOSED SUPERELEVATED TYPICAL SECTION

TO APPLY: STA. 382+74.22 NB TO STA. 401+44.76 NB (INCLUDING TRANSITIONS)
 STA. 382+65.44 SB TO STA. 401+70.16 SB (INCLUDING TRANSITIONS)

- * SLOPE PER MDOT STANDARD PLAN R-107-G *SUPERELEVATION AND PAVEMENT CROWNS*
- ** SHOULDER WIDTH VARIES TO OBTAIN 4' MIN COVER OVER WATERMAIN
 VARIES FROM 5' AT STA. 382+80.00 SB TO 10' AT STA. 383+00.00 SB
 VARIES FROM 10' AT STA. 385+00.00 SB TO 13' AT STA. 387+00.00 SB
 VARIES FROM 13' AT STA. 387+00.00 SB TO 5' AT STA. 388+00.00 SB
 VARIES FROM 5' AT STA. 394+70.00 SB TO 9' AT STA. 395+00.00 SB
 VARIES FROM 9' AT STA. 396+00.00 SB TO 16' AT STA. 398+00.00 SB
 VARIES FROM 16' AT STA. 398+00.00 SB TO 5' AT STA. 402+00.00 SB

REV	DESCRIPTION	BY	DATE	CHK'D

TETRA TECH

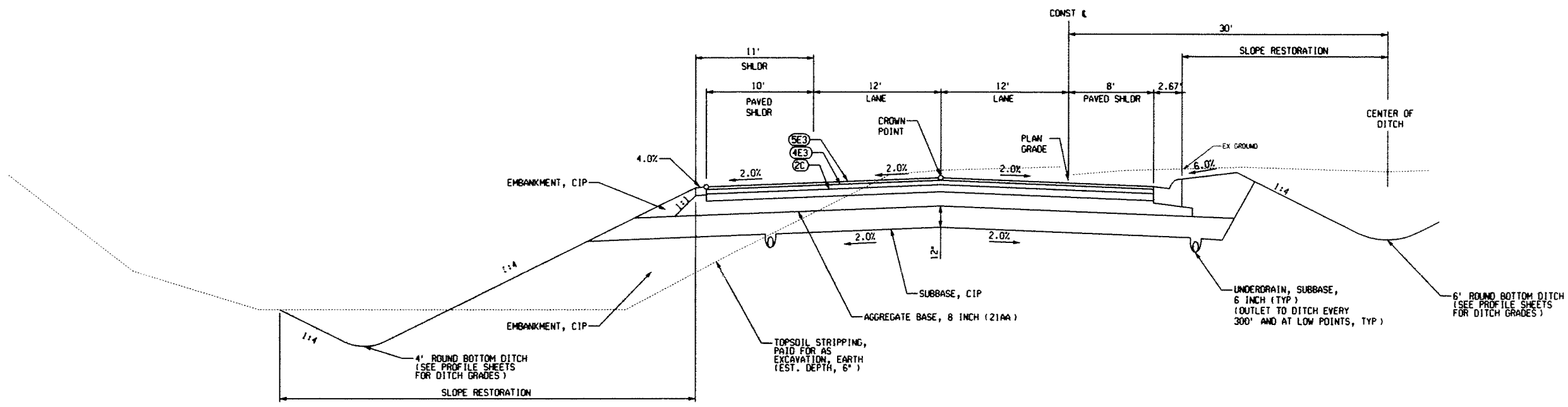
DRAWN: A. FLAK CHECKED: A.J.L.
 SCALE: 1" = 10' CADD DATE: 04-16-09 AJF/DB

PART 1: 200-12795-09001/CAD/SHEET FILES/TYPICALS4.DWG

INGHAM COUNTY ROAD COMMISSION
 CEDAR STREET IMPROVEMENTS - HOLBROOK TO COLLEGE
 DELHI TOWNSHIP, MICHIGAN

TYPICAL SECTIONS

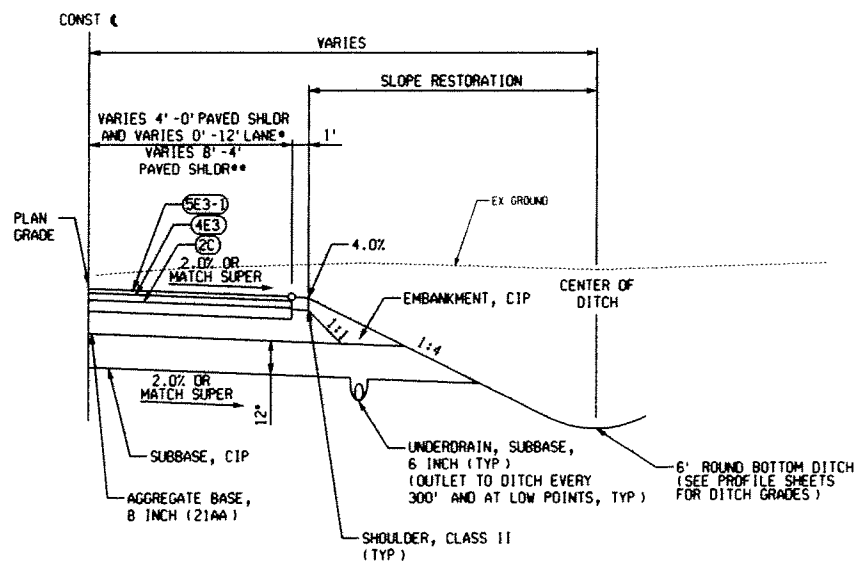
DIVISION: CONTRACT: 12795-09001-N-1 SHEET: 5 OF 100



PROPOSED CROSSOVER MEDIAN HALF-SECTION

SCALE: 1"=5'

TO APPLY: STA. 340+55.02 NB TO STA. 342+13.25 NB
 STA. 340+49.67 SB TO STA. 342+07.91 SB
 STA. 366+97.59 SB TO STA. 368+52.66 SB
 STA. 367+06.86 NB TO STA. 368+58.55 NB
 STA. 379+73.00 SB TO STA. 382+27.24 SB
 STA. 379+82.02 NB TO STA. 382+36.25 NB
 STA. 392+61.02 SB TO STA. 394+16.84 SB
 STA. 392+57.35 NB TO STA. 394+10.40 NB
 STA. 406+47.17 SB TO STA. 408+01.41 SB
 STA. 406+32.02 NB TO STA. 407+86.25 NB

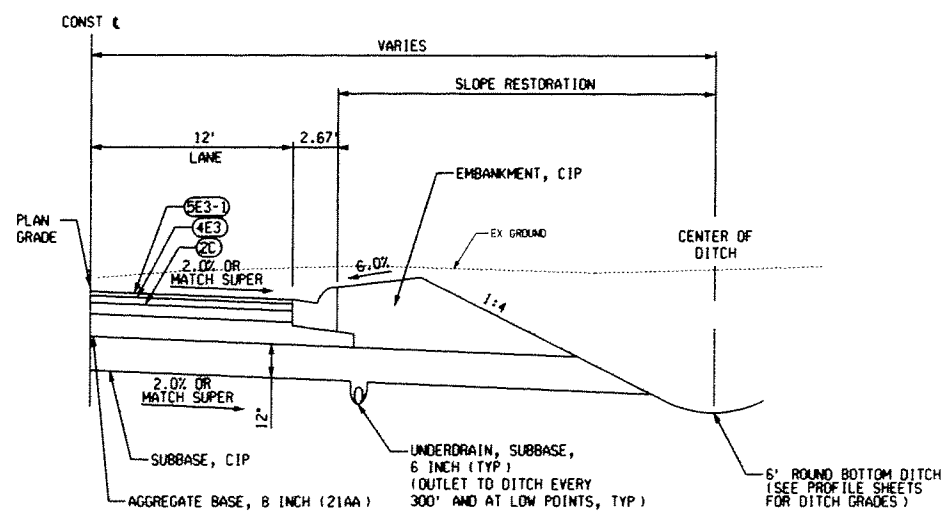


PROPOSED TRANSITION SECTION

SCALE: 1"=5'

TO APPLY: STA. 335+07.84 SB TO STA. 337+32.84 SB**
 STA. 345+38.88 NB TO STA. 347+63.88 NB**
 STA. 339+91.51 NB TO STA. 340+55.02 NB**
 STA. 342+07.91 SB TO STA. 342+94.42 SB**
 STA. 352+09.74 SB TO STA. 353+00.99 SB**
 STA. 351+30.79 NB TO STA. 352+94.69 NB**
 STA. 361+59.45 SB TO STA. 363+84.45 SB**
 STA. 366+41.08 NB TO STA. 367+06.86 NB**
 STA. 368+52.66 SB TO STA. 369+17.36 SB**
 STA. 371+74.51 NB TO STA. 372+99.51 NB**
 STA. 374+31.17 SB TO STA. 376+56.17 SB**
 STA. 379+16.20 NB TO STA. 379+82.02 NB**
 STA. 382+27.24 SB TO STA. 382+93.05 SB**
 STA. 385+53.08 SB TO STA. 387+78.08 NB**
 STA. 387+17.65 SB TO STA. 389+42.65 SB**
 STA. 391+92.57 NB TO STA. 392+56.35 NB**
 STA. 394+16.84 SB TO STA. 394+83.45 SB**
 STA. 397+25.91 NB TO STA. 399+50.91 NB**
 STA. 401+05.34 SB TO STA. 403+30.34 SB**
 STA. 405+60.20 NB TO STA. 406+32.02 NB**

TO APPLY: STA. 408+01.41 SB TO STA. 408+67.23 SB**
 STA. 411+03.08 NB TO STA. 413+28.08 NB**
 STA. 414+77.90 SB TO STA. 415+69.25 SB**
 STA. 413+82.16 NB TO STA. 414+49.74 NB**
 STA. 415+11.83 NB TO STA. 415+41.01 NB**
 STA. 417+59.79 SB TO STA. 419+18.12 SB**
 STA. 417+31.31 NB TO STA. 418+23.26 NB**
 STA. 422+79.61 SB TO STA. 423+74.80 SB**
 STA. 423+60.53 NB TO STA. 422+89.45 NB**
 STA. 426+06.31 NB TO STA. 428+35.21 NB**
 STA. 430+03.41 SB TO STA. 432+28.41 SB**
 STA. 435+35.75 SB TO STA. 435+60.75 SB**
 STA. 434+50.19 NB TO STA. 435+43.31 NB**



PROPOSED LEFT TURN LANE SECTION

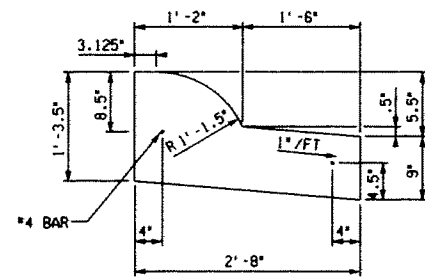
SCALE: 1"=5'

TO APPLY: STA. 337+32.84 SB TO STA. 340+49.67 SB
 STA. 342+13.25 NB TO STA. 345+38.88 NB
 STA. 363+84.45 SB TO STA. 366+97.59 SB
 STA. 368+58.55 NB TO STA. 371+74.51 NB
 STA. 376+56.17 SB TO STA. 379+73.00 SB
 STA. 382+36.25 NB TO STA. 385+53.08 NB
 STA. 389+42.65 SB TO STA. 392+61.12 SB

TO APPLY: STA. 394+10.40 NB TO STA. 397+25.91 NB
 STA. 403+30.34 SB TO STA. 406+47.17 SB
 STA. 407+86.25 NB TO STA. 411+03.08 NB
 STA. 422+89.45 NB TO STA. 426+06.31 NB
 STA. 432+28.41 SB TO STA. 435+35.75 SB

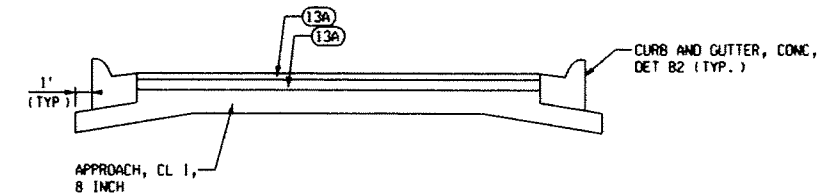
REV	DESCRIPTION	BY	DATE	CHK'D

TETRA TECH		
DESIGNED: A. FLAK	CHECKED: AJL	
SCALE: AS NOTED	CARD DATE: 04-16-08 AJF 03	
PART P: 1200-12795-09001/CAD/SHEET FILES/TYPICALS.DWG		
INGHAM COUNTY ROAD COMMISSION CEDAR STREET IMPROVEMENTS - HOLBROOK TO COLLEGE DELHI TOWNSHIP, MICHIGAN		
TYPICAL SECTIONS		
DIVISION	CONTRACT	SHEET
	12795-09001-N-1	6
		OF 100



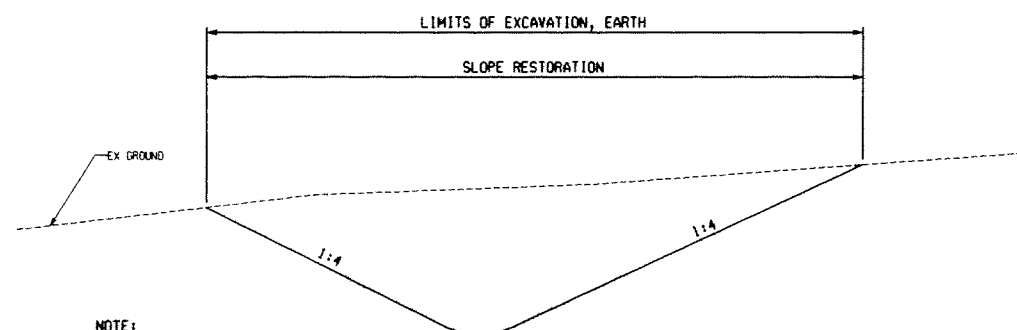
DETAIL B2, MODIFIED

SCALE: NONE



HMA DRIVEWAY SECTION

SCALE: NONE



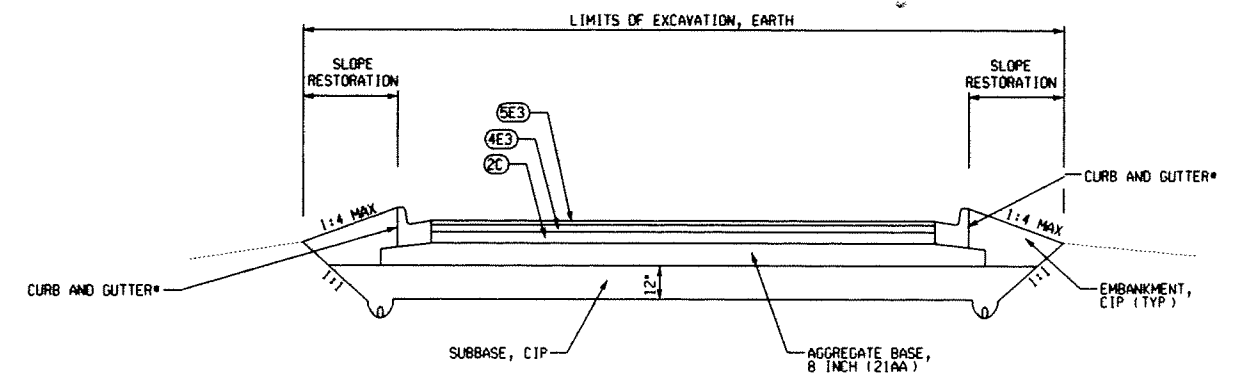
NOTE:
SEE CONSTRUCTION SHEETS
FOR DISTANCES OFF OF THE
NB CONST C

4' ROUND BOTTOM
DITCH (TYP)
(SEE CONSTRUCTION SHEETS
FOR DITCH GRADES)

DITCH CHANNEL SECTION

SCALE: NONE

STA 331+25 NB TO STA 333+79 NB (LEFT SIDE ONLY)



* CURB AND GUTTER, CONC, DET F4 AT EDGAR
CURB AND GUTTER, CONC, DET B2 AT HARPER

APPROACH PAVEMENT SECTION

SCALE: NONE

TO APPLY: EDGAR ROAD
HARPER ROAD
CIRCLE DRIVE

REV	DESCRIPTION	BY	DATE	CHK'D
△				
△				
△				
△				



DESIGNED	R. SLOVAK	CHECKED	AJL
SCALE	AS NOTED	CADD DATE	4-17-08 RJS BY
PART	P:\200-12795-09001\CAD\SMFL\WISC DETAILS.DWG		
INGHAM COUNTY ROAD COMMISSION CEDAR STREET IMPROVEMENTS - HOLBROOK TO COLLEGE DELMONT TOWNSHIP, MICHIGAN			

MISCELLANEOUS DETAILS

DIVISION	CONTRACT	SHEET
	12795-09001-N-1	7
		OF 100

GENERAL PLAN NOTES

UNDERGROUND UTILITIES
FOR PROTECTION OF UNDERGROUND UTILITIES AND IN CONFORMANCE WITH PUBLIC ACT 53, 1974, THE CONTRACTOR SHALL DIAL 1-800-482-7171 A MINIMUM OF THREE FULL WORKING DAYS, EXCLUDING SATURDAYS, SUNDAYS, AND HOLIDAYS PRIOR TO BEGINNING EACH EXCAVATION IN AREAS WHERE PUBLIC UTILITIES HAVE NOT BEEN PREVIOUSLY LOCATED. MEMBERS WILL BE ROUTINELY NOTIFIED. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO MAY NOT BE A PART OF THE "MISS DIG" ALERT SYSTEM.

PLAN INFORMATION INDICATES AN EXISTING UNDERGROUND UTILITY IS OR WILL BE OUT OF SERVICE WITHIN THE LIMITS OF THIS CONTRACT. THE CONTRACTOR IS CAUTIONED TO TREAT SUCH A LINE AS IF IT WERE STILL IN SERVICE AND NOTIFY "MISS DIG" WHEN WORKING IN THE AREA OF THE OUT OF SERVICE FACILITY.

GRADES FOR INTERSECTIONS
ALL INTERSECTIONS ARE TO BE CONSIDERED AS COMPLETE UNITS AND THEIR GRADES DETERMINED BEFORE CONSTRUCTION IS STARTED.

ADJUSTING MONUMENT BOXES
ALL GOVERNMENT CORNERS ON THIS PROJECT SHALL BE PRESERVED, WHETHER SHOWN OR NOT. IT MAY BE NECESSARY TO PLACE OR ADJUST MONUMENT BOXES, AS REQUIRED.

DRAINAGE MARKER POSTS
DRAINAGE MARKER POSTS ARE TO BE PLACED AT HEADWALLS AND CULVERT END SECTIONS ON CULVERTS 36" IN DIAMETER OR LESS, AND AT ALL OUTLET ENDINGS OUTSIDE THE LIMITS OF THE ROADBED. DRAINAGE MARKER POSTS SHALL NOT BE PLACED IN THE MEDIAN EXCEPT ON SPREAD ROADWAYS. DRAINAGE MARKER POSTS SHALL CONFORM TO THE INGHAM COUNTY ROAD COMMISSION STANDARDS.

PAVEMENT REMOVAL QUANTITIES
PAVEMENT REMOVAL AS SHOWN ON THE PLANS SHALL BE AT THE DISCRETION OF THE ENGINEER. IF IN HIS/HER JUDGEMENT, AREAS OF PAVEMENT MAY BE LEFT IN PLACE, OR ADDITIONAL AREAS ADDED TO PROVIDE THE PROPER CROSS-SECTION AND BASE, CHANGES CAN BE MADE IN THE QUANTITIES.

SLOPES
CLASS A SLOPES WILL BE REQUIRED ON THIS PROJECT.

SOIL EROSION MEASURES
PLACE TEMPORARY SEED AND MULCH AS SOON AS POSSIBLE. CRITICAL DITCH GRADES SHOULD BE PROTECTED WITH EITHER SOO OR SEED/MULCH AS DIRECTED BY THE ENGINEER.

SOIL BORINGS AND/OR PAVEMENT CORES
THE SOIL BORING LOGS AND/OR PAVEMENT CORES REPRESENT POINT INFORMATION. NO INFERENCE SHOULD BE MADE THAT SUBSURFACE OR PAVEMENT CONDITIONS ARE THE SAME AT OTHER LOCATIONS.

EXISTING WATERMAINS AND SANITARY FORCE MAIN
THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING WATERMAINS AND/OR EXISTING SANITARY FORCE MAINS DURING THE CONSTRUCTION OF THIS PROJECT.

PAVEMENT MARKINGS AND SIGNS
ALL PERMANENT PAVEMENT MARKINGS, SHAPES, AND DIMENSIONS SHALL CONFORM WITH MOOT PAVEMENT MARKING TYPICALS VIII-900 THRU 990 SERIES UNLESS SPECIFIED BY SPECIAL PROVISION.

PERMANENT SIGNS
ANY PERMANENT SIGNS REQUIRING RELOCATION DUE TO CONTRACTOR OPERATIONS SHALL BE REMOVED BY INGHAM COUNTY ROAD COMMISSION CREW. REQUESTS FOR SIGN REMOVAL SHALL BE MADE ONE WEEK IN ADVANCE OF WHEN OPERATIONS ARE SCHEDULED TO BEGIN.

OLD PLANS
THE FOLLOWING OLD PLANS WERE REFERRED TO IN THE DESIGN OF THIS PROJECT.
US-127 MOOT *33-54
FEDERAL PROJ. F146(7)

STATE PLANE COORDINATES AND DISTANCES
ALL DISTANCES & COORDINATES ON THIS PROJECT ARE ON NAD 83 MICHIGAN SOUTH ZONE LAMBERT CONFORMAL STATE PLANE COORDINATE SYSTEM. THE COMBINED SCALE FACTOR IS 0.99987547.
GROUND DISTANCE X 0.99987547 = GRID DISTANCE.

NOTES APPLYING TO TRAFFIC & SAFETY STANDARD PLANS

WHERE THE FOLLOWING ITEMS ARE CALLED FOR ON PLANS, THEY ARE TO BE CONSTRUCTED ACCORDING TO THE STANDARD PLAN GIVEN BELOW OPPOSITE EACH ITEM UNLESS OTHERWISE INDICATED. SPECIAL DETAILS ARE DENOTED WITH AN ASTERISK.

GROUND DRIVEN SIGN SUPPORTS FOR TEMPORARY SIGNS	WZD-100-A*
TEMPORARY TRAFFIC CONTROL DEVICES	WZD-125-D
TRAFFIC SIGNING GENERAL NOTES (E)	GENERAL NOTES*
STANDARD SIGN INSTALLATIONS	SIGN-100-C*
STANDARD ROUTE MARKER INSTALLATION	SIGN-110-B
SIGN LOCATION CODES PLACEMENT	SIGN-115-A
ROADSIDE SIGN LOCATIONS & SUPPORT SPACING	SIGN-120-A
STEEL POST	SIGN-200-A*
PERFORATED STEEL SQUARE TUBE	SIGN-205-A*
WOOD POST	SIGN-210-A

* DENOTES SPECIAL DETAIL

UTILITIES

THE EXISTING UTILITIES LISTED BELOW AND SHOWN ON THESE PLANS REPRESENT THE BEST INFORMATION AVAILABLE. THIS INFORMATION DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO BE SATISFIED AS TO ITS ACCURACY AND THE LOCATION OF EXISTING UTILITIES.

NAME OF OWNER KIND OF UTILITY

AT&T 337 N. ABBOTT E. LANSING, MI 48823 CONTACT: MR. DARNELL TAYLOR PHONE: (517) 337-3509	PHONE
AT&T CABLE SERVICE 1401 E. MILLER RD. LANSING, MI 48911 CONTACT: MR. DON FLOYD PHONE: (517) 394-9181	CABLE
BOARD OF WATER AND LIGHT 1232 HACO DR. LANSING, MI 48901-3007 CONTACT: MS. ROBIN SORRELLS PHONE: (517) 371-6000	WATER
CONSUMERS ENERGY 530 W. WILLOW ST. P.O. BOX 30162 LANSING, MI 48909 CONTACT: MR. PETER JEWETT PHONE: (517) 374-2366	ELECTRIC
CONSUMERS ENERGY 530 W. WILLOW ST. P.O. BOX 30162 LANSING, MI 48909 CONTACT: MR. CURTIS FATER PHONE: (517) 374-2345	GAS
INGHAM COUNTY DRAIN COMMISSION P.O. BOX 220 MASON, MI 48854-0220 CONTACT: MR. PAT LINDEMANN PHONE: (517) 676-8395	DRAINS
MC1 WORLDCOM 5688 W. GRAND RIVER AVE LANSING, MI 48906 CONTACT: MR. ARCHIE DAVIS PHONE: (517) 318-8064	PHONE
DELHI CHARTER TOWNSHIP 2074 AURELIUS ROAD HOLT, MI 48842 CONTACT: MR. JOHN ELSINGA PHONE: (517) 699-3848	SEWER

NOTES APPLYING TO STANDARD PLANS

WHERE THE FOLLOWING ITEMS ARE CALLED FOR ON PLANS, THEY ARE TO BE CONSTRUCTED ACCORDING TO THE STANDARD PLAN GIVEN BELOW OPPOSITE EACH ITEM UNLESS OTHERWISE INDICATED.

SIDEWALK RAMP DETAILS	R-28-F*
DRIVEWAY OPENINGS & APPROACHES AND CONCRETE SIDEWALKS	R-29-F*
CONCRETE CURB AND CONCRETE CURB & GUTTER	R-30-E
GRANULAR BLANKET, UNDERDRAINS, OUTLET ENDINGS FOR UNDERDRAIN, AND SEWER BULKHEADS	R-80-D
BEDDING AND FILLING AROUND PIPE CULVERTS	R-82-D
UTILITY TRENCHES	R-83-B
PRECAST CONCRETE END SECTION FOR PIPE CULVERTS	R-86-D
SOIL EROSION & SEDIMENTATION CONTROL MEASURES	R-96-D
SEEDING AND TREE PLANTING	R-100-E
SUPERELEVATION AND PAVEMENT CROWNS	R-107-G*
TEMPORARY CROSSEOVERS FOR DIVIDED ROADWAY	R-113-C
TEMPORARY TRAFFIC CONTROL DEVICES	WZD-125-D

*SPECIAL DETAIL

BENCHMARKS

BM *1	885.53	TOP OF NGS MON. TOP OF N. END WING WALL NW CORNER BRIDGE OF HARPER RD OVER US-27
BM*2	909.17	RR SPIKE E. FACE OF POWER POLE AT NW CORNER HARPER RD AND COLLEGE ROAD
BM*3	889.26	BOLT SPIKE IN NE FACE OF POWER POLE AT SW CORNER OF CEDAR STREET AND HARPER ROAD
BM*4	896.31	RR SPIKE IN W FACE OF POWER POLE ON EAST SIDE OF HOGSBACK AT NORTH END 'FUNTYME PARK' PARKING LOT ± 500' SOUTH OF COLLEGE ROAD
BM*6	901.46	MAG NAIL IN W FACE OF POWER POLE ON EAST SIDE OF HOGSBACK ROAD BETWEEN 898 AND 900 HOGSBACK
BM*7	899.48	PAINT MARK ON TOP OF NW CORNER OF CONCRETE HEADWALL ON EAST SIDE OF CEDAR STREET OPPOSITE 928 HOGSBACK
BM*8	885.83	MAG NAIL IN WEST FACE OF POWER POLE ON EAST SIDE OF CEDAR STREET ± 250' NORTH OF 1100 CEDAR STREET *JOHNNY'S LANDSCAPING*
BM*9	883.54	MAG NAIL IN WEST FACE OF POWER POLE ON EAST SIDE OF CEDAR STREET ± 400' SOUTH OF 1185 CEDAR STREET
BM*10	880.22	MAG NAIL IN EAST FACE OF POWER POLE ON EAST SIDE OF CEDAR STREET OPPOSITE 1223 CEDAR STREET *ROGERS CLINIC TIRE*
BM*11	877.06	TOP OF NE CORNER OF HEAD WALL ON EAST SIDE OF CEDAR STREET OPPOSITE 1288 CEDAR STREET *GATHERING ROOM*
BM*12	878.92	TOP OF HYDRANT ON EAST SIDE OF CEDAR STREET ± 30' NORTH OF NORTH EDGE OF DRIVEWAY AT 1350 CEDAR STREET *BRADY LAWN EQUIPMENT*
BM*13	876.77	MAG NAIL IN WEST FACE OF POWER POLE ON EAST SIDE OF CEDAR STREET OPPOSITE *DISCOUNT CARPET WAREHOUSE*
BM*14	872.78	PAINT MARK ON TOP OF NORTHWEST WING WALL TO BRIDGE OVER DRAIN
BM*15	887.26	MAG NAIL IN WEST FACE OF POWER POLE ON EAST SIDE OF CEDAR STREET OPPOSITE HOLBROOK DRIVE AT ENTRANCE TO NYE HOLT STEEL
BM*16	886.61	PAINT MARK ON TOP SOUTHWEST BOLT TO SIGN BASE FOR *ALBERT ALIGNMENT* SIGN EAST SIDE OF CEDAR STREET JUST NORTH OF *1722 CEDAR STREET
BM*17	883.34	TOP NORTHWEST CORNER OF CONCRETE HEADWALL ON NORTH SIDE OF DRIVEWAY TO *1800 NORTH CEDAR STREET EAST SIDE OF CEDAR STREET *CRAFT CARE HOME*
BM*18	884.16	PAINT MARK ON TOP OF SOUTHWEST CORNER CURB AT CATCHBASIN AT SOUTH BULLNOSE
BM*19	886.29	MAG NAIL IN EAST FACE OF POWER POLE AT THE NORTHEAST CORNER OF CEDAR STREET AND DALLAS STREET 50' ± NORTH OF DALLAS STREET

MISCELLANEOUS ESTIMATES

THE FOLLOWING ITEMS OF WORK SHALL BE DONE AS THEY APPLY THROUGHOUT THE PROJECT. THESE ITEMS ARE NOT DETAILED OR INCLUDED ON THE PLAN AND PROFILE SHEETS:

MISCELLANEOUS ITEMS

10	Ea	Dr Marker Post
8	Ea	Post, Mailbox
10	Ea	Tree, Rem, 6 inch to 18 inch
3649	Ft	Video Taping Sewer and Culv Pipe
4	Ea	Monument Box
50	Ft	Exploratory Trenching

ITEMS FOR CORRECTION OF POSSIBLE UNSTABLE SUBGRADE CONDITIONS

10	Ea	Dr Structure, Top, 6 inch
100	Cyd	Excavation, Peat
750	Cyd	Subgrade Undercutting, Type I
750	Cyd	Subgrade Undercutting, Type II
500	Ft	Underdrain, Subgrade, 6 inch
225	Ft	Underdrain, Outlet, 6 inch
15	Ea	Underdrain, Outlet Ending, 6 inch
250	Syd	Geotextile Stabilization

EROSION AND SEDIMENTATION CONTROL ITEMS

150	Ft	Erosion Control, Check Dam, Stone ⁽³⁷⁾
2	Ea	Erosion Control, Sediment Trap ⁽²¹⁾
100	Cyd	Erosion Control, Maintenance, Sediment Removal
8000	Ft	Erosion Control, Silt Fence ⁽²⁶⁾
5	Ea	Erosion Control, Inlet Protection, Sediment Trap ⁽³¹⁾
5	Ea	Erosion Control, Inlet Protection, Fabric Drop ^(39A)
25	Ea	Erosion Control, Inlet Protection, Geotextile and Stone ^(39B)

TRAFFIC MAINTENANCE ITEMS

5	Ea	Post, Mailbox
1	Ls	Minor Traf Devices
1	Ls	Flag Control
30	Ea	Sign Cover
50	Sft	Sign, Type B, Temp, Furn - Special
50	Sft	Sign, Type B, Temp, Oper - Special
105	Ea	Plastic Drum, High Intensity, Lighted, Furn
100	Ea	Plastic Drum, High Intensity, Lighted, Oper
20	Ea	Barricade, Type III, High Intensity, Lighted, Furn
15	Ea	Barricade, Type III, High Intensity, Lighted, Oper
15	Ton	Dust Palliative, Applied
50	Ton	HMA, 3C
1000	Cyd	Maintenance Gravel, LM

DESIGNED	R. SLOVAK	CHECKED	AJL
SCALE	NONE	CADD DATE	04-21-09 RJS/BJ
PART	...200-12795-09001/SHR/ST/FILED/NOTE.DWG		
INGHAM COUNTY ROAD COMMISSION CEDAR STREET IMPROVEMENTS - HOLBROOK DRIVE TO COLLEGE DELHI TOWNSHIP, MICHIGAN			
NOTE SHEET			
DWNO	CONTRACT	SHEET	
	12795-09001-N-1	8 OF 100	

WATER & DRAINAGE SYMBOLS

- EXISTING CATCH BASIN
- ⊙ PROPOSED CATCH BASIN
- EXISTING MANHOLE
- PROPOSED MANHOLE
- ⌒ EXISTING END SECTION
- ⌒ PROPOSED END SECTION
- ⊖ WATER SHUTOFF (Service Valve)
- GATE VALVE
- GATEWELL
- ⊕ WATER METER
- ⊗ WATER MANHOLE
- ⊕ EXISTING FIRE HYDRANT
- ⊕ PROPOSED FIRE HYDRANT
- Ⓜ (ADJ-HYD) ADJUST FIRE HYDRANT
- Ⓜ (ADJ-1) ADJUST DRAINAGE STRUCTURE, CASE 1 OR 2
- Ⓜ (ADJ-K) ADJUST DRAINAGE STRUCTURE W/COVER
- Ⓜ (ADJ-WSO) ADJUST WATER SHUT OFF
- Ⓜ (ADJ-B/O) ADJUST DRAINAGE STRUCTURE BY OTHERS
- Ⓜ (ADJ-GW) ADJUST GATE WELL COVER
- Ⓜ (REC) RECONSTRUCT DRAINAGE STRUCTURE
- Ⓜ (REL-HYD) RELOCATE FIRE HYDRANT
- Ⓜ (REC-K) RECONSTRUCT DRAINAGE STRUCTURE W/COVER
- Ⓜ (REL-WSO) RELOCATE WATER SHUT OFF
- Ⓜ (REL-B/O) RELOCATE - BY OTHERS
- Ⓜ (SR-1) SIDEWALK RAMP TYPE
- ∧ CHECK DAM (PROFILES)
- ∩ DIKE (PROFILES)
- W.T. WATER TABLE (PROFILES)
- Ⓜ (W) WATER WELL

REAL ESTATE SYMBOLS

- PROPERTY OWNERSHIP ARROW
- ↗ CONTIGUOUS PROPERTY SYMBOL
- 123456 PARCEL NUMBER BOX
- PARCEL LINES

UTILITIES SYMBOLS

- UTILITY POLE
- ⊕ LIGHT POLE
- ⊕ POWER LIGHT POLE
- TEL TELEPHONE MANHOLE
- ⊗ POWER TOWER
- ⊕ G GAS VALVE
- ⊖ WALK/NO-WALK
- DEADMAN FOR GUYWIRE
- Ⓜ (R) RAILROAD SIGNAL
- ⊕ ELECTRICAL MANHOLE
- ⊕ ELECTRICAL RISER
- ELECTRICAL HANDHOLE
- TEL TELEPHONE PEDESTAL/RISER
- ⊕ FIBER OPTIC MARKER
- ⊕ GAS LINE MARKER

MISCELLANEOUS SYMBOLS

- ⊗ RIPRAP
- S SIGN (EXISTING)
- ⊕ SIGN (PROPOSED)
- ⊕ STUMP
- ⊕ SWAMP
- ⊕ DECIDUOUS TREE
- ⊕ EVERGREEN TREE
- MB MAIL BOX
- P PDST
- ⊕ QUARTER CORNER
- SECTION CORNER
- ⊕ HALF QUARTER SECTION
- ⊕ T.H.* TEST HOLE NO.
- 123 BEAM G. R. RUN NUMBER (EXISTING)
- 123 BEAM G. R. RUN NUMBER (PROPOSED)

HAZARDOUS OR FLAMMABLE MATERIAL USED WITH UNDERGROUND GAS & ELECTRICAL LINES

CAUTION - CRITICAL UNDERGROUND UTILITY USED WITH FIBER OPTICS LINES

PROP 36" PROPOSED CULVERT/SEWER

12" CMP EXISTING CULVERT/SEWER

UTILITY PATTERNS

- ELEC --- ELECTRICAL LINE
- 24" GAS --- GAS LINE
- 12" OIL --- OIL LINE
- TELE --- TELEPHONE LINE
- 36" WATER --- WATER LINE
- CTV --- CABLE TV
- TELE PD --- FIBER OPTICS
- POWER TRANSMISSION LINE

R.O.W. PATTERNS

- EX. LIMITED ACCESS R.O.W.
- EXISTING R.O.W.
- PROP LIMITED ACCESS R.O.W.
- PROP FREE ACCESS R.O.W.
- SECTION LINE

TOPO PATTERNS

- HEDGE LINE
- TREE LINE
- EXISTING FENCE
- PROPOSED FENCE
- EXISTING GUARD RAIL
- PROPOSED GUARD RAIL
- DRAINAGE CRS/EDGE OF WATER
- WETLANDS AREA
- ABANDONED UTILITY
- CITY LIMITS
- RAILROAD
- SOUND ABATEMENT WALL
- CONCRETE MEDIAN BARRIER
- SLOPE STAKE LINE
- EDGE OF PAVEMENT
- EDGE OF GRAVEL
- PROPOSED DITCH LINE

DRIVE/APPROACH LEGEND

- CONCRETE
- HMA
- AGGREGATE

REMOVAL LEGEND

- REMOVING HMA
- REMOVING SIDEWALK
- REMOVING PAVEMENT
- COLD-MILLING
- REMOVING CURB & GUTTER
- REMOVING
- REMOVING GUARDRAIL
- ABANDONING
- SAVE
- BULKHEAD
- CLEARING

SPECIAL LEGEND THIS PROJECT

(R/S-B/O) REMOVE AND SALVAGE BY OTHERS

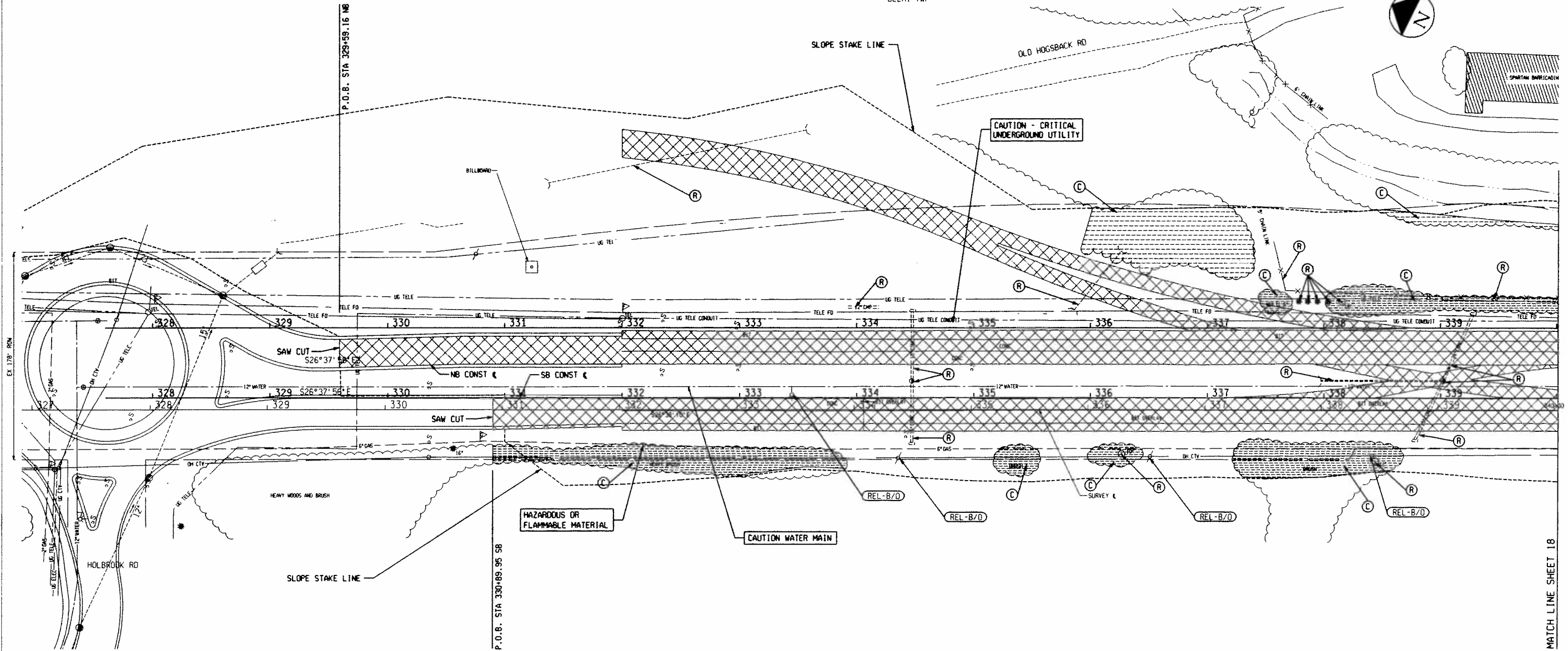
REV	DESCRIPTION	BY	DATE	CHK'D

TETRA TECH

DESIGNED: R. SLEVAK CHECKED: AJL
 SCALE: NONE CADD DATE: 04-21-09 RLS BY:
 PART: ... 200-18795-09001/CAD/SHEETS/FILES/LEGEND.DWG
 INGHAM COUNTY ROAD COMMISSION
 CEDAR STREET IMPROVEMENTS - HARBROOK TO COLLEGE
 DELHI TOWNSHIP, MICHIGAN

SURVEY L
 CURVE DATA
 $\Delta = 12^{\circ}00'15.00''$ (RT)
 $D = 2^{\circ}00'00.51''$
 $R = 2864.53'$
 $L = 203.71'$
 $L = 605.17'$
 $E = 16.06'$
 PC: STA 318+49.04
 P1: STA 322+52.75
 PT: STA 325+54.20
 P2: STA 329+59.16
 P3: STA 333+64.12
 P4: STA 337+69.08
 P5: STA 341+74.04
 P6: STA 345+79.00
 P7: STA 349+83.96
 P8: STA 353+88.92
 P9: STA 357+93.88
 P10: STA 361+98.84
 P11: STA 365+103.80
 P12: STA 369+108.76
 P13: STA 373+113.72
 P14: STA 377+118.68
 P15: STA 381+123.64
 P16: STA 385+128.60
 P17: STA 389+133.56
 P18: STA 393+138.52
 P19: STA 397+143.48
 P20: STA 401+148.44
 P21: STA 405+153.40
 P22: STA 409+158.36
 P23: STA 413+163.32
 P24: STA 417+168.28
 P25: STA 421+173.24
 P26: STA 425+178.20
 P27: STA 429+183.16
 P28: STA 433+188.12
 P29: STA 437+193.08
 P30: STA 441+198.04
 P31: STA 445+203.00
 P32: STA 449+207.96
 P33: STA 453+212.92
 P34: STA 457+217.88
 P35: STA 461+222.84
 P36: STA 465+227.80
 P37: STA 469+232.76
 P38: STA 473+237.72
 P39: STA 477+242.68
 P40: STA 481+247.64
 P41: STA 485+252.60
 P42: STA 489+257.56
 P43: STA 493+262.52
 P44: STA 497+267.48
 P45: STA 501+272.44
 P46: STA 505+277.40
 P47: STA 509+282.36
 P48: STA 513+287.32
 P49: STA 517+292.28
 P50: STA 521+297.24
 P51: STA 525+302.20
 P52: STA 529+307.16
 P53: STA 533+312.12
 P54: STA 537+317.08
 P55: STA 541+322.04
 P56: STA 545+327.00
 P57: STA 549+331.96
 P58: STA 553+336.92
 P59: STA 557+341.88
 P60: STA 561+346.84
 P61: STA 565+351.80
 P62: STA 569+356.76
 P63: STA 573+361.72
 P64: STA 577+366.68
 P65: STA 581+371.64
 P66: STA 585+376.60
 P67: STA 589+381.56
 P68: STA 593+386.52
 P69: STA 597+391.48
 P70: STA 601+396.44
 P71: STA 605+401.40
 P72: STA 609+406.36
 P73: STA 613+411.32
 P74: STA 617+416.28
 P75: STA 621+421.24
 P76: STA 625+426.20
 P77: STA 629+431.16
 P78: STA 633+436.12
 P79: STA 637+441.08
 P80: STA 641+446.04
 P81: STA 645+451.00
 P82: STA 649+455.96
 P83: STA 653+460.92
 P84: STA 657+465.88
 P85: STA 661+470.84
 P86: STA 665+475.80
 P87: STA 669+480.76
 P88: STA 673+485.72
 P89: STA 677+490.68
 P90: STA 681+495.64
 P91: STA 685+500.60
 P92: STA 689+505.56
 P93: STA 693+510.52
 P94: STA 697+515.48
 P95: STA 701+520.44
 P96: STA 705+525.40
 P97: STA 709+530.36
 P98: STA 713+535.32
 P99: STA 717+540.28
 P100: STA 721+545.24
 P101: STA 725+550.20
 P102: STA 729+555.16
 P103: STA 733+560.12
 P104: STA 737+565.08
 P105: STA 741+570.04
 P106: STA 745+575.00
 P107: STA 749+579.96
 P108: STA 753+584.92
 P109: STA 757+589.88
 P110: STA 761+594.84
 P111: STA 765+599.80
 P112: STA 769+604.76
 P113: STA 773+609.72
 P114: STA 777+614.68
 P115: STA 781+619.64
 P116: STA 785+624.60
 P117: STA 789+629.56
 P118: STA 793+634.52
 P119: STA 797+639.48
 P120: STA 801+644.44
 P121: STA 805+649.40
 P122: STA 809+654.36
 P123: STA 813+659.32
 P124: STA 817+664.28
 P125: STA 821+669.24
 P126: STA 825+674.20
 P127: STA 829+679.16
 P128: STA 833+684.12
 P129: STA 837+689.08
 P130: STA 841+694.04
 P131: STA 845+699.00
 P132: STA 849+703.96
 P133: STA 853+708.92
 P134: STA 857+713.88
 P135: STA 861+718.84
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 P139: STA 877+738.68
 P140: STA 881+743.64
 P141: STA 885+748.60
 P142: STA 889+753.56
 P143: STA 893+758.52
 P144: STA 897+763.48
 P145: STA 901+768.44
 P146: STA 905+773.40
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 P149: STA 917+788.28
 P150: STA 921+793.24
 P151: STA 925+798.20
 P152: STA 929+803.16
 P153: STA 933+808.12
 P154: STA 937+813.08
 P155: STA 941+818.04
 P156: STA 945+823.00
 P157: STA 949+827.96
 P158: STA 953+832.92
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 P166: STA 985+872.60
 P167: STA 989+877.56
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 P173: STA 1013+907.32
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 P308: STA 1553+1580.00
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 P312: STA 1569+1600.00
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 P322: STA 1609+1650.00
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 P324: STA 1617+1660.00
 P325: STA 1621+1665.00
 P326: STA 1625+1670.00
 P327: STA 1629+1675.00
 P328: STA 1633+1680.00
 P329: STA 1637+1685.00
 P330: STA 1641+1690.00
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 P333: STA 1653+1705.00
 P334: STA 1657+1710.00
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 P336: STA 1665+1720.00
 P337: STA 1669+1725.00
 P338: STA 1673+1730.00
 P339: STA 1677+1735.00
 P340: STA 1681+1740.00
 P341: STA 1685+1745.00
 P342: STA 1689+1750.00
 P343: STA 1693+1755.00
 P344: STA 1697+1760.00
 P345: STA 1701+1765.00
 P346: STA 1705+1770.00
 P347: STA 1709+1775.00
 P348: STA 1713+1780.00
 P349: STA 1717+1785.00
 P350: STA 1721+1790.00
 P351: STA 1725+1795.00
 P352: STA 1729+1800.00
 P353: STA 1733+1805.00
 P354: STA 1737+1810.00
 P355: STA 1741+1815.00
 P356: STA 1745+1820.00
 P357: STA 1749+1825.00
 P358: STA 1753+1830.00
 P359: STA 1757+1835.00
 P360: STA 1761+1840.00
 P361: STA 1765+1845.00
 P362: STA 1769+1850.00
 P363: STA 1773+1855.00
 P364: STA 1777+1860.00
 P365: STA 1781+1865.00
 P366: STA 1785+1870.00
 P367: STA 1789+1875.00
 P368: STA 1793+1880.00
 P369: STA 1797+1885.00
 P370: STA 1801+1890.00
 P371: STA 1805+1895.00
 P372: STA 1809+1900.00
 P373: STA 1813+1905.00
 P374: STA 1817+1910.00
 P375: STA 1821+1915.00
 P376: STA 1825+1920.00
 P377: STA 1829+1925.00
 P378: STA 1833+1930.00
 P379: STA 1837+1935.00
 P380: STA 1841+1940.00
 P381: STA 1845+1945.00
 P382: STA 1849+1950.00
 P383: STA 1853+1955.00
 P384: STA 1857+1960.00
 P385: STA 1861+1965.00
 P386: STA 1865+1970.00
 P387: STA 1869+1975.00
 P388: STA 1873+1980.00
 P389: STA 1877+1985.00
 P390: STA 1881+1990.00
 P391: STA 1885+1995.00
 P392: STA 1889+2000.00
 P393: STA 1893+2005.00
 P394: STA 1897+2010.00
 P395: STA 1901+2015.00
 P396: STA 1905+2020.00
 P397: STA 1909+2025.00
 P398: STA 1913+2030.00
 P399: STA 1917+2035.00
 P400: STA 1921+2040.00
 P401: STA 1925+2045.00
 P402: STA 1929+2050.00
 P403: STA 1933+2055.00
 P404: STA 1937+2060.00
 P405: STA 1941+2065.00
 P406: STA 1945+2070.00
 P407: STA 1949+2075.00
 P408: STA 1953+2080.00
 P409: STA 1957+2085.00
 P410: STA 1961+2090.00
 P411: STA 1965+2095.00
 P412: STA 1969+2100.00
 P413: STA 1973+2105.00
 P414: STA 1977+2110.00
 P415: STA 1981+2115.00
 P416: STA 1985+2120.00
 P417: STA 1989+2125.00
 P418: STA 1993+2130.00
 P419: STA 1997+2135.00
 P420: STA 2001+2140.00
 P421: STA 2005+2145.00
 P422: STA 2009+2150.00
 P423: STA 2013+2155.00
 P424: STA 2017+2160.00
 P425: STA 2021+2165.00
 P426: STA 2025+2170.00
 P427: STA 2029+2175.00
 P428: STA 2033+2180.00
 P429: STA 2037+2185.00
 P430: STA 2041+2190.00
 P431: STA 2045+2195.00
 P432: STA 2049+2200.00
 P433: STA 2053+2205.00
 P434: STA 2057+2210.00
 P435: STA 2061+2215.00
 P436: STA 2065+2220.00
 P437: STA 2069+2225.00
 P438: STA 2073+2230.00
 P439: STA 2077+2235.00
 P440: STA 2081+2240.00
 P441: STA 2085+2245.00
 P442: STA 2089+2250.00
 P443: STA 2093+2255.00
 P444: STA 2097+2260.00
 P445: STA 2101+2265.00
 P446: STA 2105+2270.00
 P447: STA 2109+2275.00
 P448: STA 2113+2280.00
 P449: STA 2117+2285.00
 P450: STA 2121+2290.00
 P451: STA 2125+2295.00
 P452: STA 2129+2300.00
 P453: STA 2133+2305.00
 P454: STA 2137+2310.00
 P455: STA 2141+2315.00
 P456: STA 2145+2320.00
 P457: STA 2149+2325.00
 P458: STA 2153+2330.00
 P459: STA 2157+2335.00
 P460: STA 2161+2340.00
 P461: STA 2165+2345.00
 P462: STA 2169+2350.00
 P463: STA 2173+2355.00
 P464: STA 2177+2360.00
 P465: STA 2181+2365.00
 P466: STA 2185+2370.00
 P467: STA 2189+2375.00
 P468: STA 2193+2380.00
 P469: STA 2197+2385.00
 P470: STA 2201+2390.00
 P471: STA 2205+2395.00
 P472: STA 2209+2400.00
 P473: STA 2213+2405.00
 P474: STA 2217+2410.00
 P475: STA 2221+2415.00
 P476: STA 2225+2420.00
 P477: STA 2229+2425.00
 P478: STA 2233+2430.00
 P479: STA 2237+2435.00
 P480: STA 2241+2440.00
 P481: STA 2245+2445.00
 P482: STA 2249+2450.00
 P483: STA 2253+2455.00
 P484: STA 2257+2460.00
 P485: STA 2261+2465.00
 P486: STA 2265+2470.00
 P487: STA 2269+2475.00
 P488: STA 2273+2480.00
 P489: STA 2277+2485.00
 P490: STA 2281+2490.00
 P491: STA 2285+2495.00
 P492: STA 2289+2500.00
 P493: STA 2293+2505.00
 P494: STA 2297+2510.00
 P495: STA 2301+2515.00
 P496: STA 2305+2520.00
 P497: STA 2309+2525.00
 P498: STA 2313+2530.00
 P499: STA 2317+2535.00
 P500: STA 2321+2540.00
 P501: STA 2325+2545.00
 P502: STA 2329+2550.00
 P503: STA 2333+2555.00
 P504: STA 2337+2560.00
 P505: STA 2341+2565.00
 P506: STA 2345+2570.00
 P507: STA 2349+2575.00
 P508: STA 2353+2580.00
 P509: STA 2357+2585.00
 P510: STA 2361+2590.00
 P511: STA 2365+2595.00
 P512: STA 2369+2600.00
 P513: STA 2373+2605.00
 P514: STA 2377+2610.00
 P515: STA 2381+2615.00
 P516: STA 2385+2620.00
 P517: STA 2389+2625.00
 P518: STA 2393+2630.00
 P519: STA 2397+2635.00
 P520: STA 2401+2640.00
 P521: STA 2405+2645.00
 P522: STA 2409+2650.00
 P523: STA 2413+2655.00
 P524: STA 2417+2660.00
 P525: STA 2421+2665.00
 P526: STA 2425+2670.00
 P527: STA 2429+2675.00
 P528: STA 2433+2680.00
 P529: STA 2437+2685.00
 P530: STA 2441+2690.00
 P531: STA 2445+2695.00
 P532: STA 2449+2700.00
 P533: STA 2453+2705.00
 P534: STA 2457+2710.00
 P535: STA 2461+2715.00
 P536: STA 2465+2720.00
 P537: STA 2469+2725.00
 P538: STA 2473+2730.00
 P539: STA 2477+2735.00
 P540: STA 2481+2740.00
 P541: STA 2485+2745.00
 P542: STA 2489+2750.00
 P543: STA 2493+2755.00
 P544: STA 2497+2760.00
 P545: STA 2501+2765.00
 P546: STA 2505+2770.00
 P547: STA 2509+2775.00
 P548: STA 2513+2780.00
 P549: STA 2517+2785.00
 P550: STA 2521+2790.00
 P551: STA 25

SECTION 23
T3N, R2W
DELHI TWP



EX. 170' - R/W

EX. 100' VARIES

MATCH LINE SHEET 18

REMOVAL LEGEND	
REMOVING PAVEMENT	
REMOVING GUARDRAIL	
CLEARING	
RELOCATE - BY OTHERS	
REMOVING CURB, GUTTER AND CURB & GUTTER	

REMOVAL QUANTITIES - THIS SHEET

0.5	Acres Clearing
8440	Syd Pavt, Rem
8	Ea Tree, Rem, 6 inch to 18 inch
2	Ea Culv, Rem, Less Than 24 inch
2	Ea Dr Structure, Rem
280	Ft Sewer, Rem, Less Than 24 inch
64	Ft Sewer, Rem 24 inch to 48 inch
280	Ft Fence, Rem

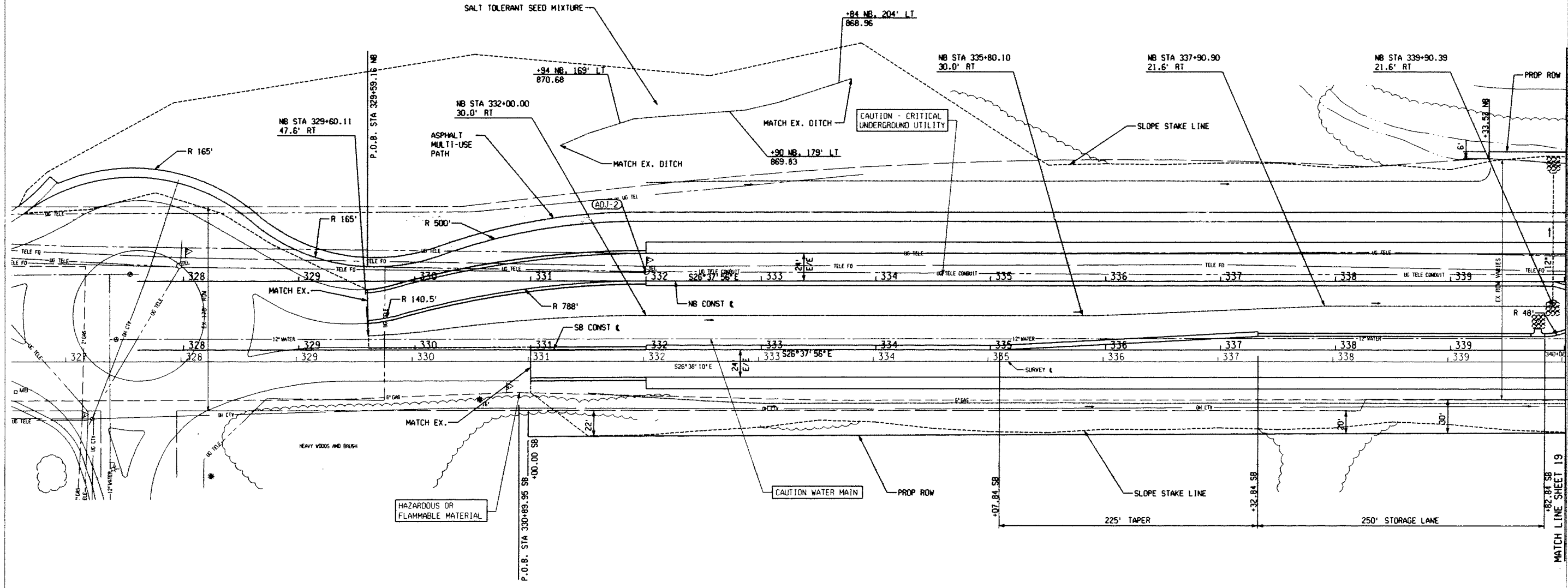
NOTE:
REMOVAL OF TREES LESS THAN 6 INCH IN DIAMETER SHALL BE INCLUDED IN EXCAVATION, EARTH

REV	DESCRIPTION	BY	DATE	CHK'D

TETRA TECH

DESIGNED	A. FLAK	CHECKED	AJL
SCALE	1"=40'	CHD DATE	04-20-09 AJL 01
PART	P:\200-12795-09001\CAD\DWG\12795-09001-18.DWG		
INOHAM COUNTY ROAD COMMISSION CEDAR STREET IMPROVEMENTS - HOLBROOK TO COLLEGE DELHI TOWNSHIP, MICHIGAN			
REMOVAL PLAN			
CEDAR STREET			
POB TO STA 340+00			
DWING	CONTRACT	SHEET	
	12795-09001-N-1	13	
		OF 100	

SECTION 23
T3N, R2W
DELHI TWP



CONSTRUCTION QUANTITIES - THIS SHEET

9426	Syd	Aggregate Base, 8 inch
337	Syd	Shoulder, C1 II, 6 inch
1	Ea	D Structure Cover, Adj, Case 2
3910	Ft	Underdrain, Subgrade, 6 inch
300	Ft	Underdrain Outlet, 6 inch
12	Ea	Underdrain, Outlet Ending, 6 inch
1836	Ton	HMA, 2C
845	Ton	HMA, 4E3
775	Ton	HMA, 5E3
73	Ton	HMA, 4E3, High Stress
143	Ton	HMA, 5E3, High Stress
975	Ft	Curb and Gutter, Conc, Det B2
20	Syd	Riprap, Plain
XX	Sto	Ditching
6235	Syd	Slope Restoration

REV	DESCRIPTION	BY	DATE	CHK'D

TETRA TECH

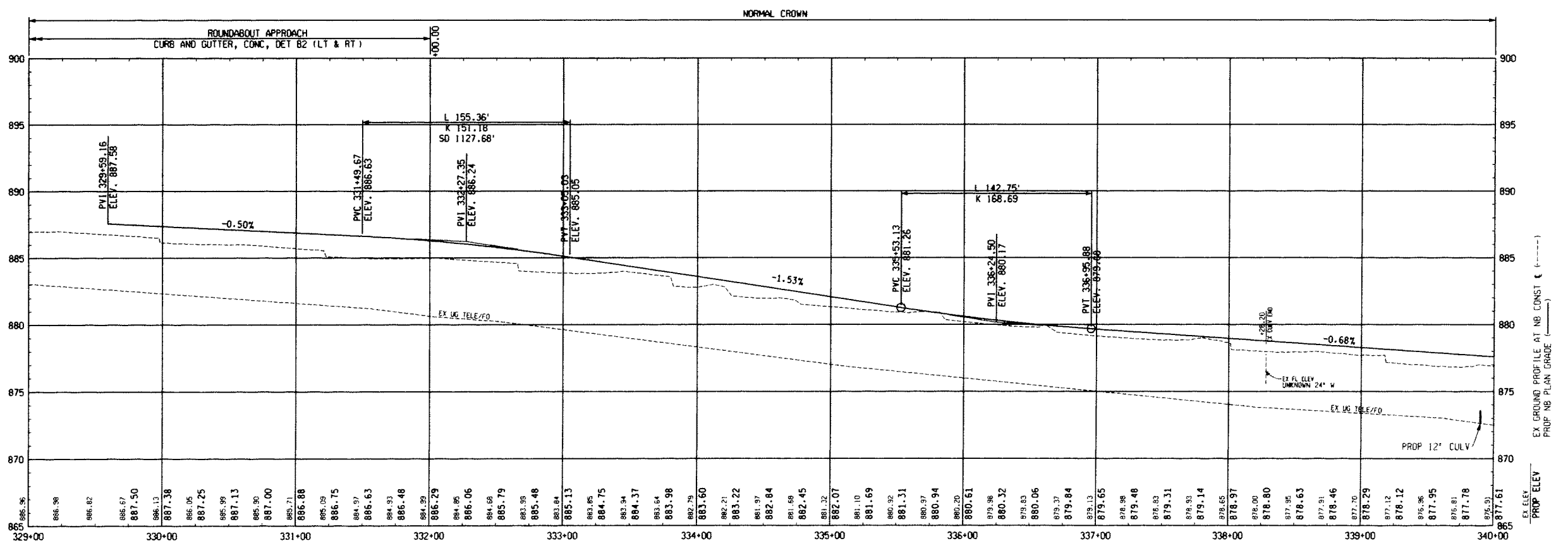
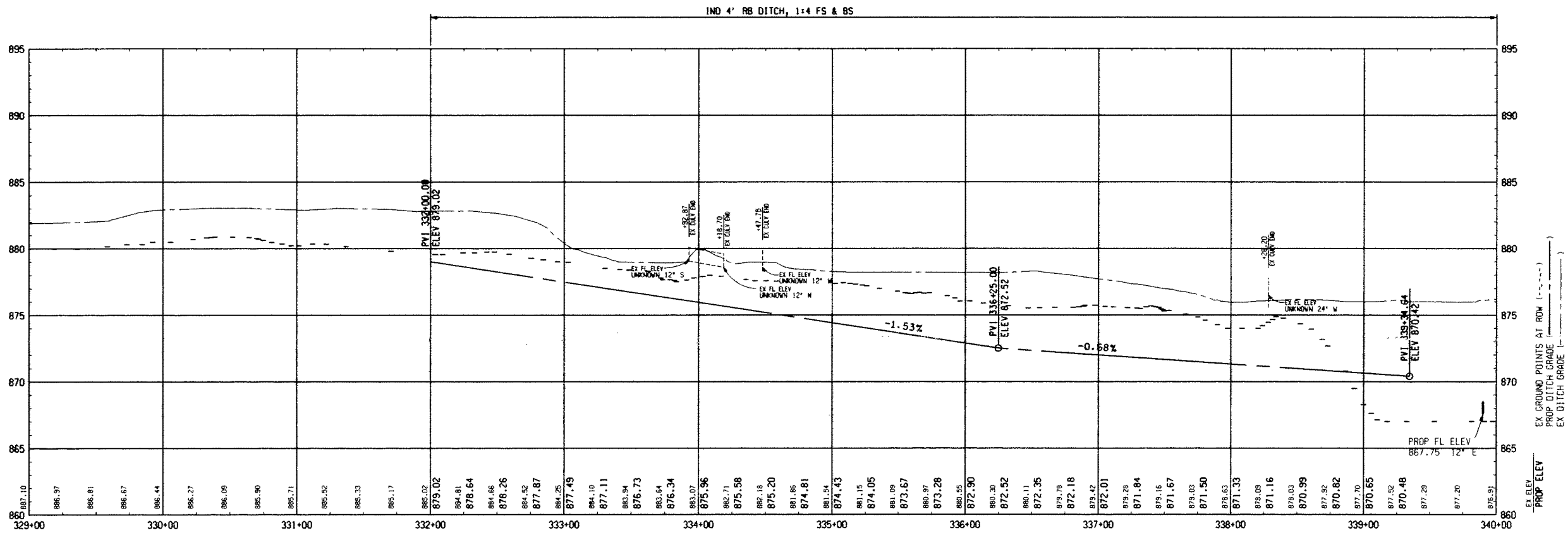
DESIGNED: A. FLAK CHECKED: AJL
SCALE: 1"=100' CADD DATE: 04-03-09 BUS MS

PART # 1200-12795-09001-CAD/SHEET FILES/PLAN.DWG

INGHAM COUNTY ROAD COMMISSION
CEDAR STREET IMPROVEMENTS - HOLBROOK TO COLLEGE
DELHI TOWNSHIP, MICHIGAN

CONSTRUCTION PLAN
CEDAR STREET
POB TO STA 340+00

DIVISION	CONTRACT	SHEET
	12795-09001-N-1	14
		OF 100



EARTHWORK QUANTITIES	
15647 Cyd	Excavation, Earth
72 Cyd	Embankment, CIP
3259 Cyd	Subbase, CIP

RIM ELEVATIONS ARE BASED ON ELEVATIONS AT EDGE OF PAVEMENT

REV	DESCRIPTION	BY	DATE	CHK'D

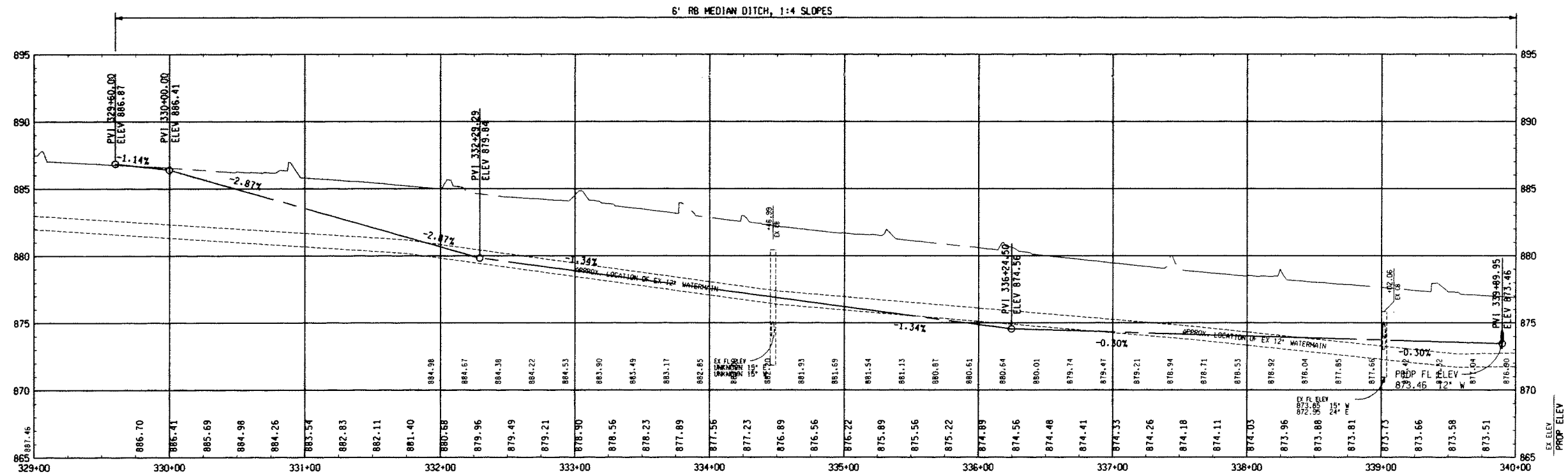
TETRA TECH

DESIGNED: R. SLOVAK CHECKER: A.J.L.
 SCALE: 1"=40' CADD DATE: 04-15-09 BLS 01

PART OF 12/10/08/30/09/PROF FILE NORTH ROW

LINGHAM COUNTY ROAD COMMISSION
 CEDAR STREET IMPROVEMENTS - HOE BROOK TO COLLEGE
 DELHI TOWNSHIP, MICHIGAN

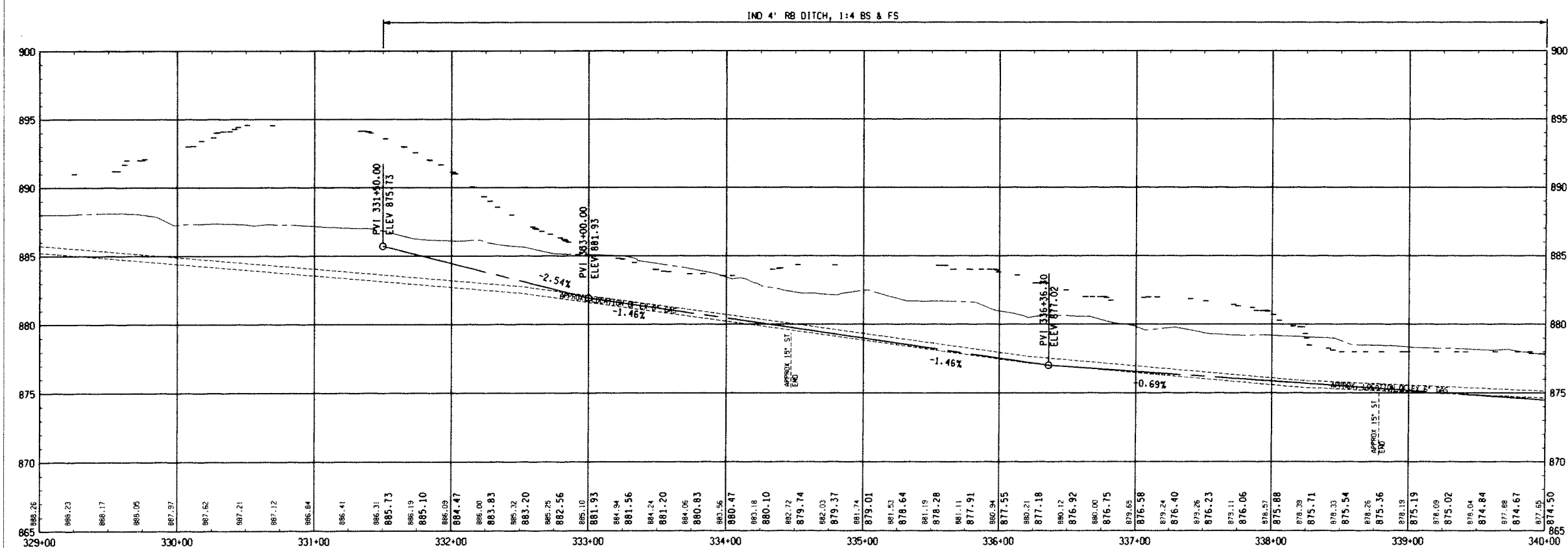
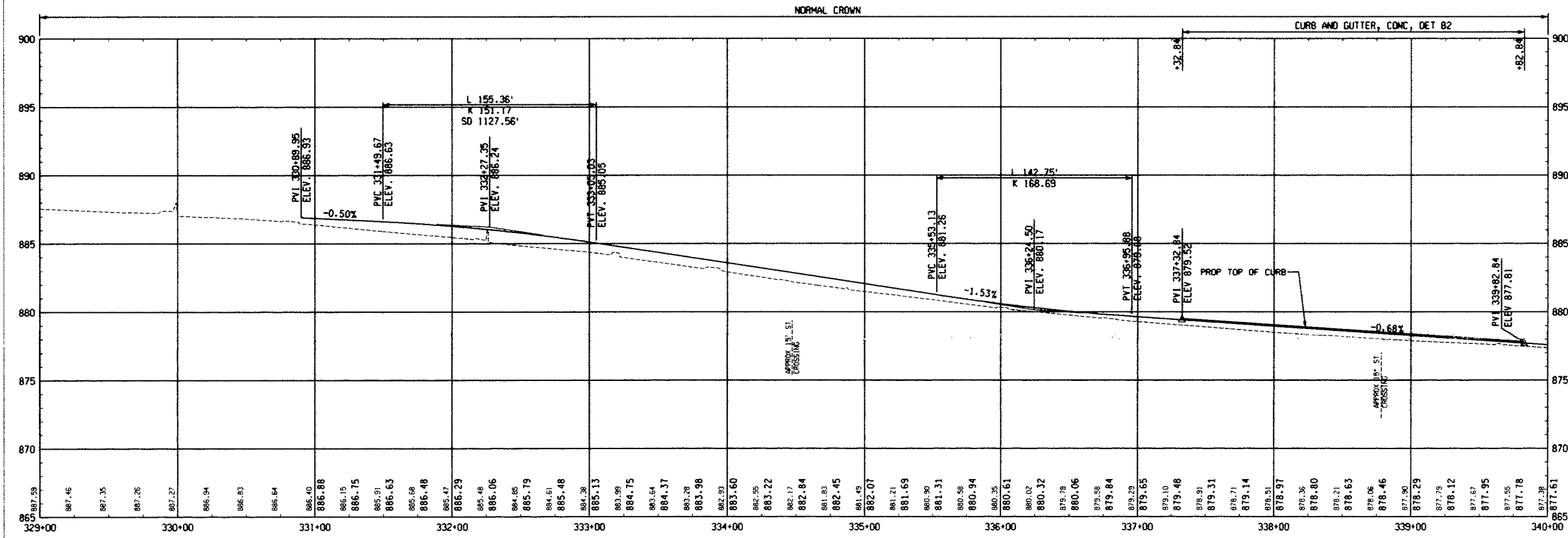
NB PROFILE CEDAR STREET POB TO STA 340+00		
DIVISION	CONTRACT	SHEET
	12795-09001-N-1	15
		OF 100



EX ELEV
PROP ELEV

EX MEDIAN DITCH GRADE (---)
PROP MEDIAN DITCH GRADE (—)

△				
△				
△				
△				
REV	DESCRIPTION	BY	DATE	CHK'D
DESIGNED	R. SLOVAK	CHECKED	A.J.L.	
SCALE	1"=40'	CADD DATE	04-15-09 RJS DT	
PART OF 10'0004/30'00' PROF FILE 12911.TCH.DGN				
INGHAM COUNTY ROAD COMMISSION CEDAR STREET IMPROVEMENTS - HOLBROOK TO COLLEGE DELHI TOWNSHIP, MICHIGAN				
MEDIAN PROFILE CEDAR STREET P0B TO STA 340+00				
DIVISION	CONTRACT	SHEET		DATE
	12795-09001-N-1	16		OF 100



EX GROUND PROFILE AT SB CONST (---)
 PROP SB PLAN GRADE (—)

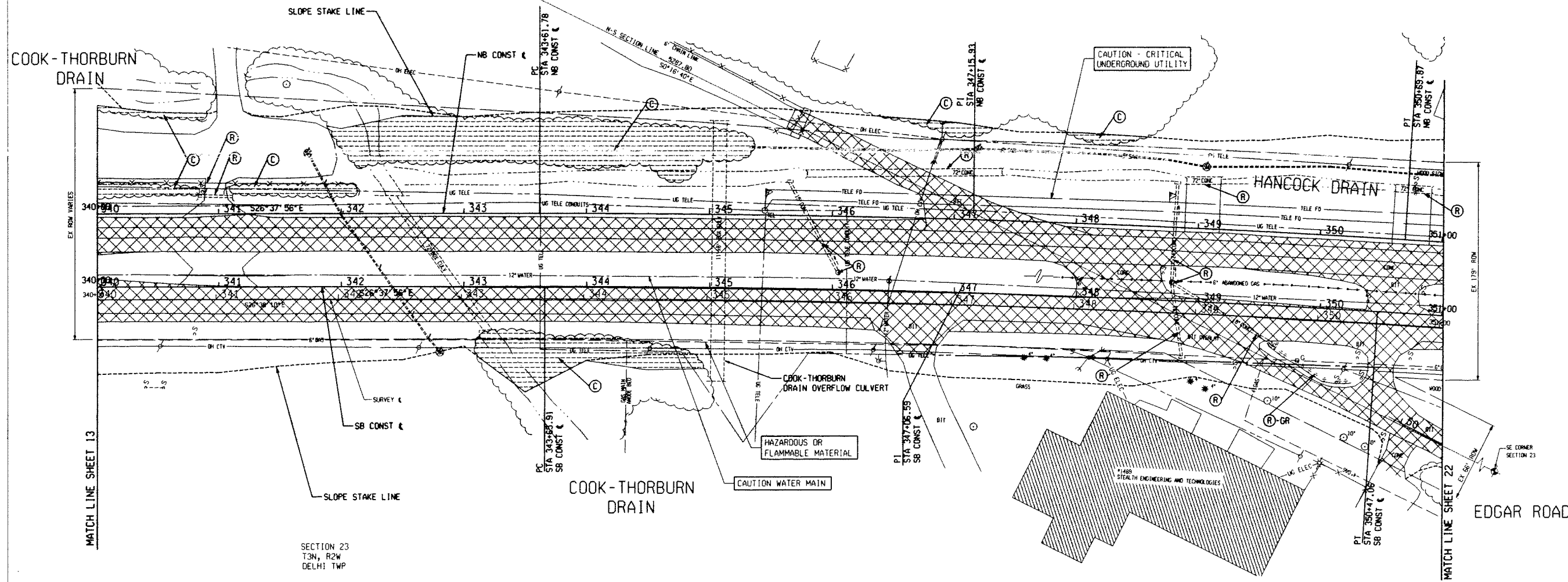
EX GROUND POINTS AT ROW (---)
 PROP DITCH GRADE (---)
 EX DITCH GRADE (---)

REV	DESCRIPTION	BY	DATE	CHK'D

TETRA TECH		
DESIGNED R. SLOVAK	CHECKED AJL	
SCALE 1"=40'	CARD DATE 04-15-09 RJS 01	
PART 01/101004/30/PROF FILE125010.DWG		
INGHAM COUNTY ROAD COMMISSION CEDAR STREET IMPROVEMENTS - HOLBROOK TO COLLEGE DELHI TOWNSHIP, MICHIGAN		
SB PROFILE CEDAR STREET PDB TO STA 340+00		
DIVISION	CONTRACT	SHEET
	12795-09001-N-1	17
		OF 100

NB CONSTRUCTION ϵ **SB CONSTRUCTION** ϵ **SURVEY** ϵ
CURVE DATA **CURVE DATA** **CURVE DATA**
 $\Delta=3^{\circ}30'15"$ (RT) $\Delta=3^{\circ}28'25"$ (RT) $\Delta=3^{\circ}30'15"$ (RT)
 $D=0^{\circ}29'42"$ $D=0^{\circ}30'36"$ $D=0^{\circ}29'52.39"$
 $R=11577.81'$ $R=11234.89'$ $R=11507.81'$
 $T=354.16'$ $T=340.68'$ $T=352.01'$
 $L=708.09'$ $L=681.15'$ $L=703.81'$
 $E=5.42'$ $E=5.16'$ $E=5.38'$
 $PC=STA 343+61.78$ $PC=STA 343+65.91$ $PC=STA 343+65.48$
 $PI=STA 347+15.93$ $PI=STA 347+06.59$ $PI=STA 347+17.49$
 $PT=STA 350+69.87$ $PT=STA 350+47.06$ $PT=STA 350+69.29$
SUPER= 2.00% **SUPER= 2.00%**

SECTION 24
T3N, R2W
DELHI TWP



MATCH LINE SHEET 13

MATCH LINE SHEET 22

REMOVAL LEGEND	
REMOVING PAVEMENT	
REMOVING	
REMOVING GUARDRAIL	
CLEARING	
RELOCATE - BY OTHERS	
REMOVING CURB, GUTTER AND CURB & GUTTER	

REMOVAL QUANTITIES - THIS SHEET

- 0.5 Acre Clearing
- 1 Ea Culv, Rem, Less than 24 inch
- 3 Ea Culv, Rem, Over 48 inch
- 2 Ea Dr Structure, Rem
- 248 Ft Sewer, Rem, Less than 24 inch
- 332 Ft Sewer, Rem, 24 inch to 48 inch
- 80 Ft Guardrail, Rem
- 211 Ft Fence, Rem
- 9147 Syd Pavt, Rem

NOTE:
REMOVAL OF TREES LESS THAN 6 INCH IN DIAMETER SHALL BE INCLUDED IN EXCAVATION, EARTH

REV	DESCRIPTION	BY	DATE	CHK'D

TETRA TECH

DESIGNED: A. FLAK	CHECKED: AJL
SCALE: 1"=40'	CAD DATE: 04-20-09 AJF/BS

PART #1/300-12795-09001/CAD/SHEET FILES/NEWS.BOX

INGHAM COUNTY ROAD COMMISSION
CEDAR STREET IMPROVEMENTS - HOLBROOK TO COLLEGE
DELHI TOWNSHIP, MICHIGAN

REMOVAL PLAN
CEDAR STREET
STA 340+00 TO 351+00

DIVISION	CONTRACT	SHEET
	12795-09001-N-1	18
		OF 100

NB CONSTRUCTION CURVE DATA
 $\Delta: 3^{\circ}30'15"$ (RT)
 $D: 0^{\circ}29'42"$
 $R: 11577.81'$
 $T: 354.16'$
 $L: 708.09'$
 $E: 5.42'$
 $PC: STA 343+61.78$
 $PI: STA 347+15.93$
 $PT: STA 350+69.87$
 $SUPER: 2.00\%$

SB CONSTRUCTION CURVE DATA
 $\Delta: 3^{\circ}28'25"$ (RT)
 $D: 0^{\circ}30'36"$
 $R: 11234.89'$
 $T: 340.68'$
 $L: 681.15'$
 $E: 5.16'$
 $PC: STA 343+65.91$
 $PI: STA 347+06.59$
 $PT: STA 350+47.06$
 $SUPER: 2.00\%$

SURVEY CURVE DATA
 $\Delta: 3^{\circ}30'15"$ (RT)
 $D: 0^{\circ}29'52.35"$
 $R: 11507.81'$
 $T: 362.01'$
 $L: 703.81'$
 $E: 5.38'$
 $PC: STA 343+65.48$
 $PI: STA 347+17.49$
 $PT: STA 350+69.28$

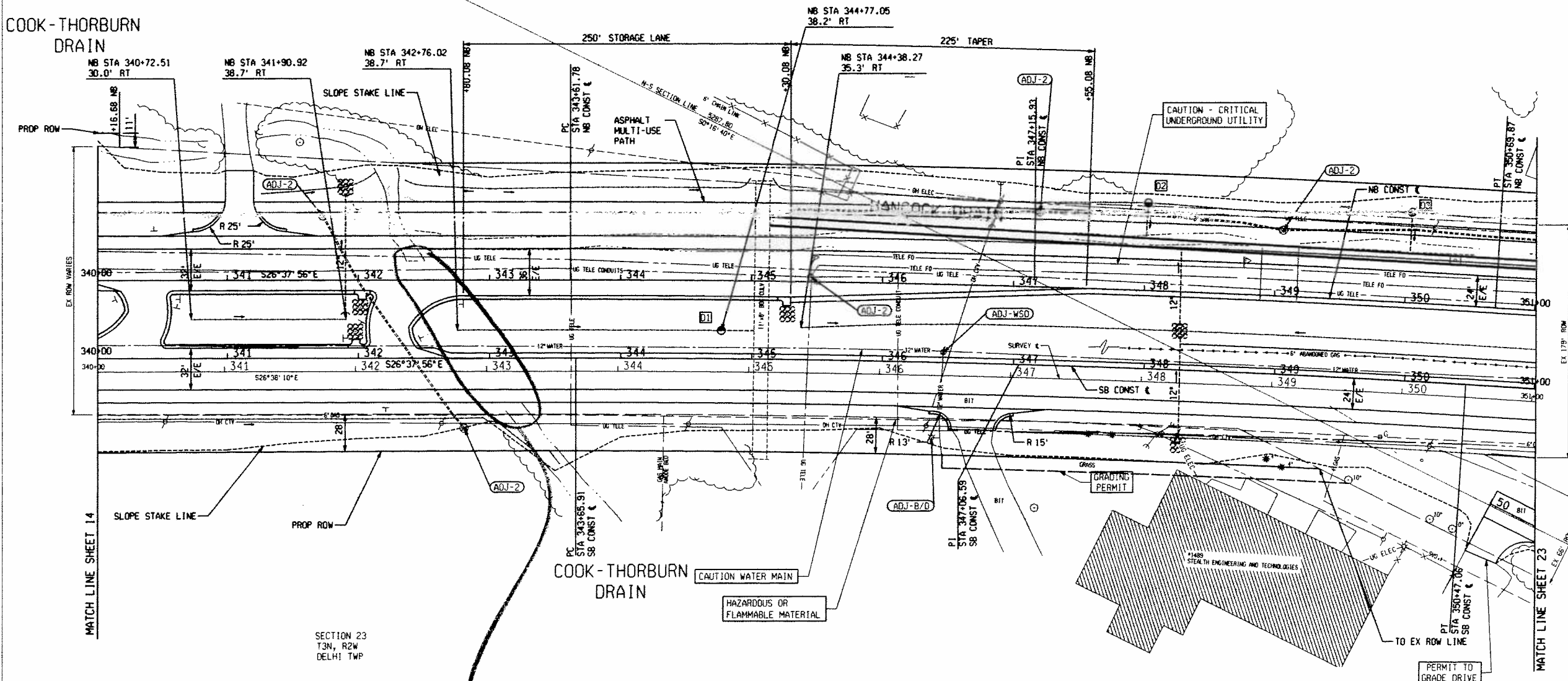
SECTION 24
 T3N, R2W
 DELHI TWP

STATION	Driveway		DRIVEWAY APPROACHES				CULVERT SIZE*	Culv End Sect, Conc, 12 inch
	Opening, Det #L	Conc, Det M	APPR, CL 1, 8 inch	HMA Appr, Ton	Driveway, Nonrein, Conc, 8 inch	Syd		
346+69 RT			112	18			12	2
341+13 LT			215	35			12	2
TOTAL			327	53				4

*FOR INFORMATION ONLY



COOK - THORBURN DRAIN



MATCH LINE SHEET 14

MATCH LINE SHEET 23

SECTION 23
 T3N, R2W
 DELHI TWP

Show Ex. unless we end up removing - see previous sheet

CONSTRUCTION QUANTITIES - THIS SHEET

11743	Syd	Aggregate Base, 8 inch
389	Syd	Shoulder, C1 11, 6 inch
266	Ft	Culv, C1 A, Conc, 12 inch
5	Ea	Culv End Sect, Conc, 12 inch
5	Ea	Dr Structure Cover, Adj, Case 2
4400	Ft	Underdrain, Subgrade, 6 inch
400	Ft	Underdrain Outlet, 6 inch
16	Ea	Underdrain, Outlet Ending, 6 inch
2340	Ton	HMA, 2C
1170	Ton	HMA, 4E3
1005	Ton	HMA, SE3
165	Ton	HMA, SE3, High Stress
895	Ft	Curb and Gutter, Conc, Det B2
17241	Syd	Slope Restoration
1	Ea	Water Shutoff, Adj

REV	DESCRIPTION	BY	DATE	CHK'D

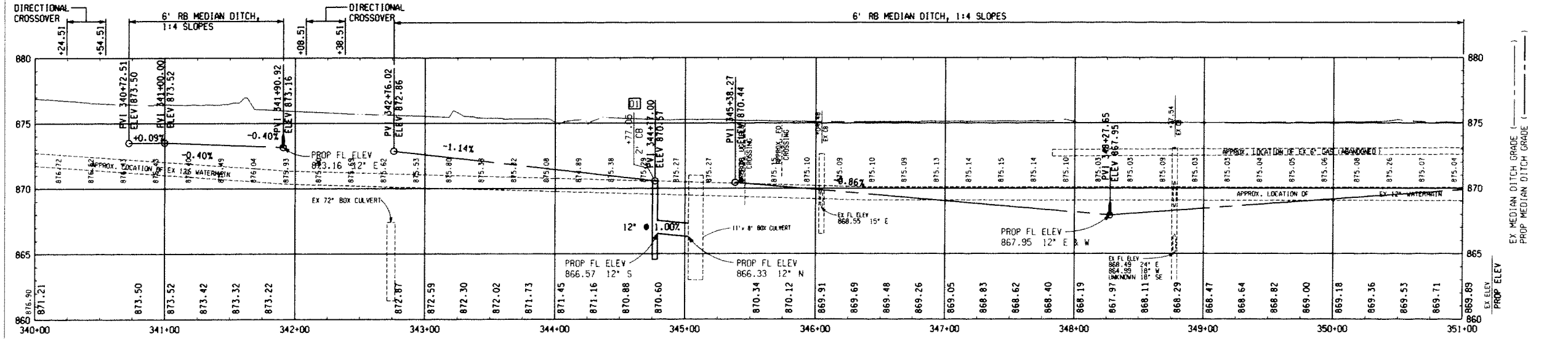
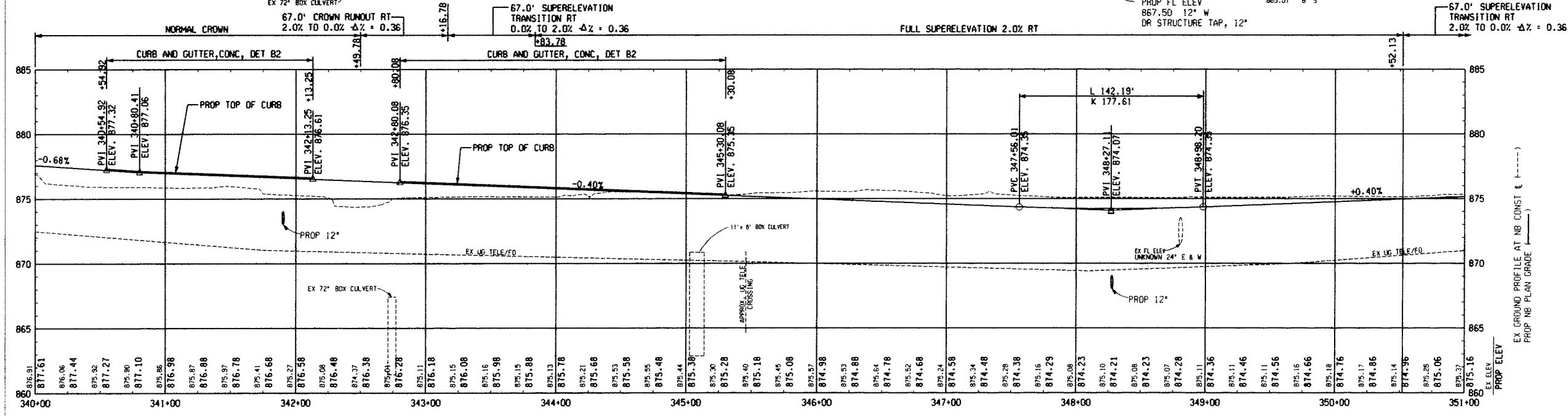
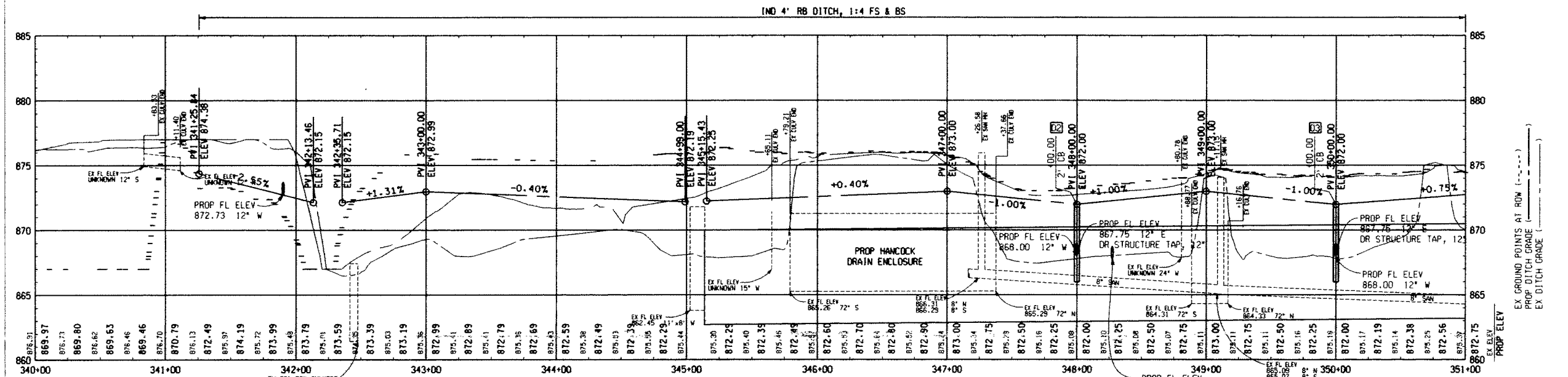
TETRA TECH

DESIGNED: A. FLAK CHECKED: AJL
 SCALE: 1"=40' CADD DATE: 04-17-09 A.M. 14
 PART #1: 200-12795-09001/CAD/SHEET FILES/PLANS.BOM

INDIAN COUNTY ROAD COMMISSION
 CEDAR STREET IMPROVEMENTS - HOLBROOK TO COLLEGE
 DELHI TOWNSHIP, MICHIGAN

CONSTRUCTION PLAN
 CEDAR STREET
 STA 340+00 TO 351+00

DIVISION	CONTRACT	SHEET
	12795-09001-N-1	19 OF 100



EARTHWORK QUANTITIES	
12456 Cud	Excavation, Earth
3480 Cud	Embankment, CIP
3255 Cud	Subbase, CIP

RIM ELEVATIONS ARE BASED ON ELEVATIONS AT EDGE OF PAVEMENT

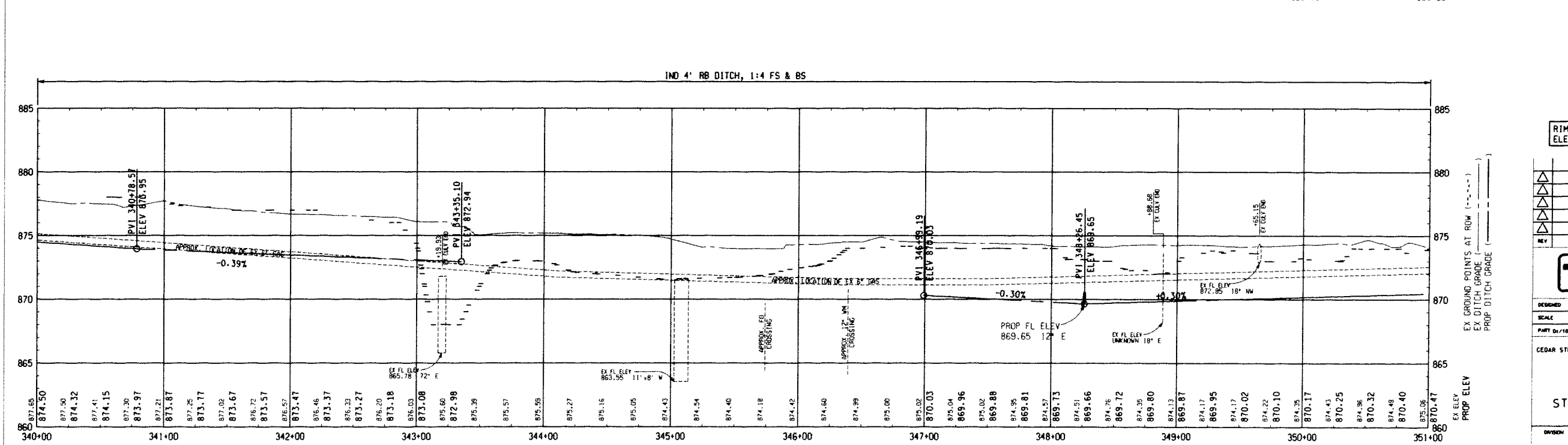
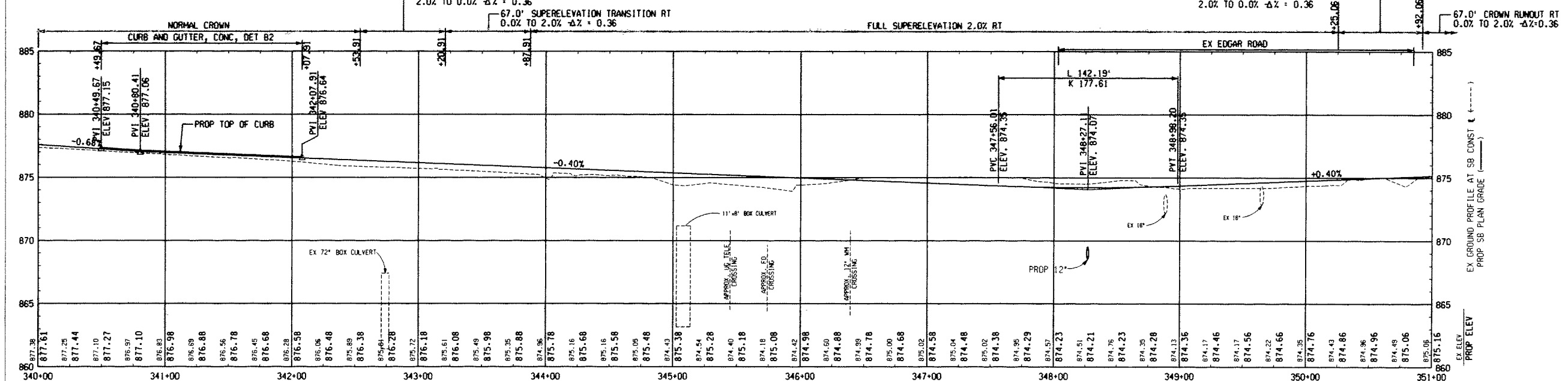
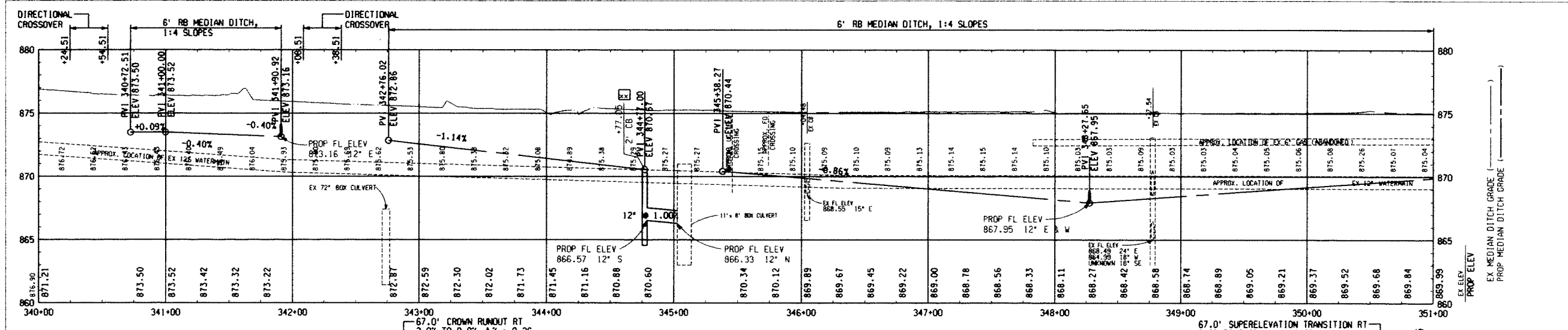
REV	DESCRIPTION	BY	DATE	CHK'D



DESIGNED R. SLOVAK CHECKED AJL
 SCALE 1"=40' CADD DATE 04-15-09 RJS DT
 PART OF 11010004/30/PROF ILLUMIN. DEN
 INGHAM COUNTY ROAD COMMISSION
 CEDAR STREET IMPROVEMENTS - HOLLAND TO COLLEGE
 DELHI TOWNSHIP, MICHIGAN

NB PROFILE
 CEDAR STREET
 STA 340+00 TO 351+00

DWGSN	CONTRACT	SHEET
	12795-09001-N-1	20
		OF 100



RIM ELEVATIONS ARE BASED ON ELEVATIONS AT EDGE OF PAVEMENT

REV	DESCRIPTION	BY	DATE	CHK'D

TETRA TECH

DESIGNED: R. SLOVAK CHECKED: AJL
 SCALE: 1"=40' CADD DATE: 04-15-09 RJS/DJ
 PART OF: 1010004/30/PA/PROF/LESSOUTH.BGN

INGHAM COUNTY ROAD COMMISSION
 CEDAR STREET IMPROVEMENTS - HOLLAND TO COLLEGE
 DELHI TOWNSHIP, MICHIGAN

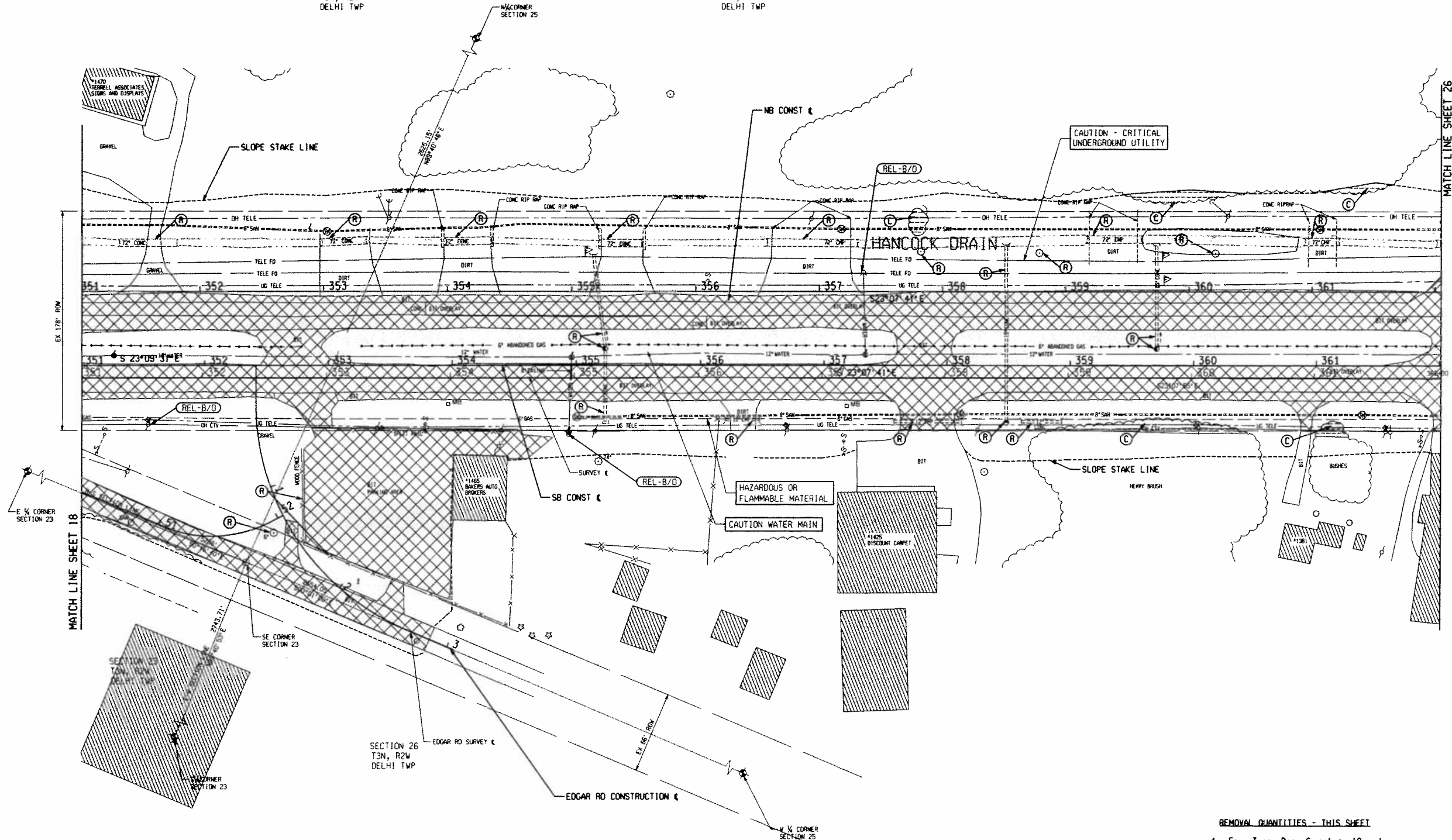
SB PROFILE
CEDAR STREET
STA 340+00 TO 351+00

DIVISION: CONTRACT: 12795-09001-N-1 SHEET: 21 OF 100



SECTION 24
T3N, R2W
DELHI TWP

SECTION 25
T3N, R2W
DELHI TWP



REMOVAL LEGEND

REMOVING PAVEMENT	
REMOVING	
REMOVING GUARDRAIL	
CLEARING	
RELOCATE - BY OTHERS	
REMOVING CURB, GUTTER AND CURB & GUTTER	

REMOVAL QUANTITIES - THIS SHEET

- 4 Ea Tree, Rem, 6 inch to 18 inch
- 3 Ea Culv, Rem, Less than 24 inch
- 6 Ea Culv, Rem, Over 48 inch
- 10806 Syd Pavt, Rem
- 150 Ft Fence, Rem
- 3 Ea Dr Structure, Rem
- 368 Ft Sewer, Rem, Less Than 24 inch
- 0.1 Acre Clearing

NOTE:
REMOVAL OF TREES LESS THAN 6 INCH IN DIAMETER SHALL BE INCLUDED IN EXCAVATION, EARTH

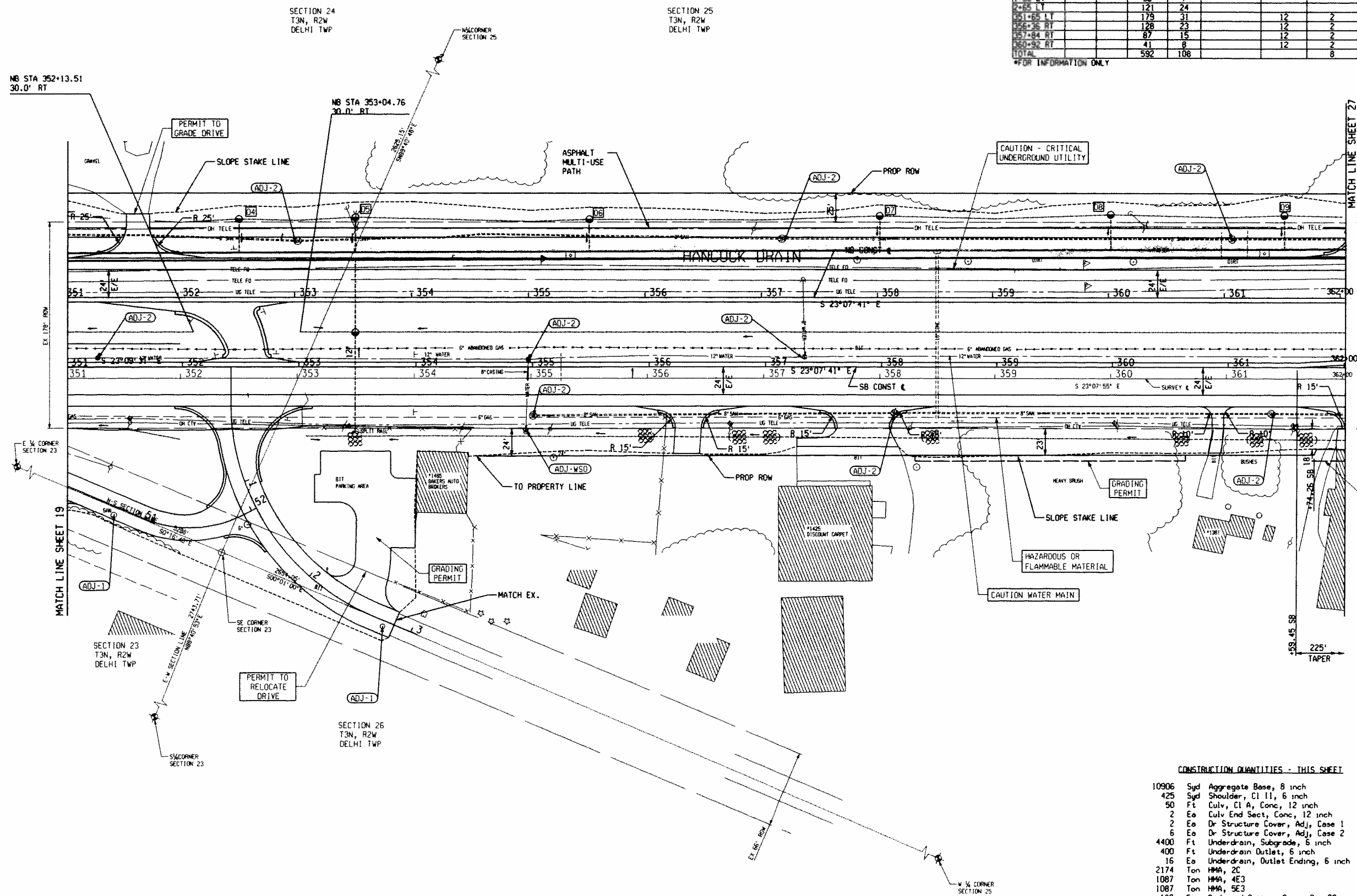
REV	DESCRIPTION	BY	DATE	CHK'D

DESIGNED A. FLAK	CHECKED AJL
SCALE 1"=40'	CADD DATE 04-20-09 AJL 16
PART P1/200-12795-09001/CAD/SHEET FILES/REM-DWG	
INGHAM COUNTY ROAD COMMISSION CEDAR STREET IMPROVEMENTS - HOLBROOK TO COLLEGE DELHI TOWNSHIP, MICHIGAN	
REMOVAL PLAN	
CEDAR STREET	
STA 351+00 TO 362+00	
DIVISION	CONTRACT
12795-09001-N-1	SHEET 22
	OF 100

FUTURE ROAD

STATION	Driveway		DRIVEWAY APPROACHES				CULVERT SIZE*	Culv End Sect, Conc, 12 inch
	Opening, Det	Conc	APPR, CL 1, 6 inch	HMA Appr	Driveway, Nonreinf Conc, 8 inch	Syd		
	Ft	Ft	Syd	Ton	Syd	Inch		
1+98 LT			36	7				
2+65 LT			121	24				
351+65 LT			179	31		12	2	
356+36 RT			128	23		12	2	
357+84 RT			87	15		12	2	
360+92 RT			41	8		12	2	
TOTAL			592	108			8	

*FOR INFORMATION ONLY



CONSTRUCTION QUANTITIES - THIS SHEET

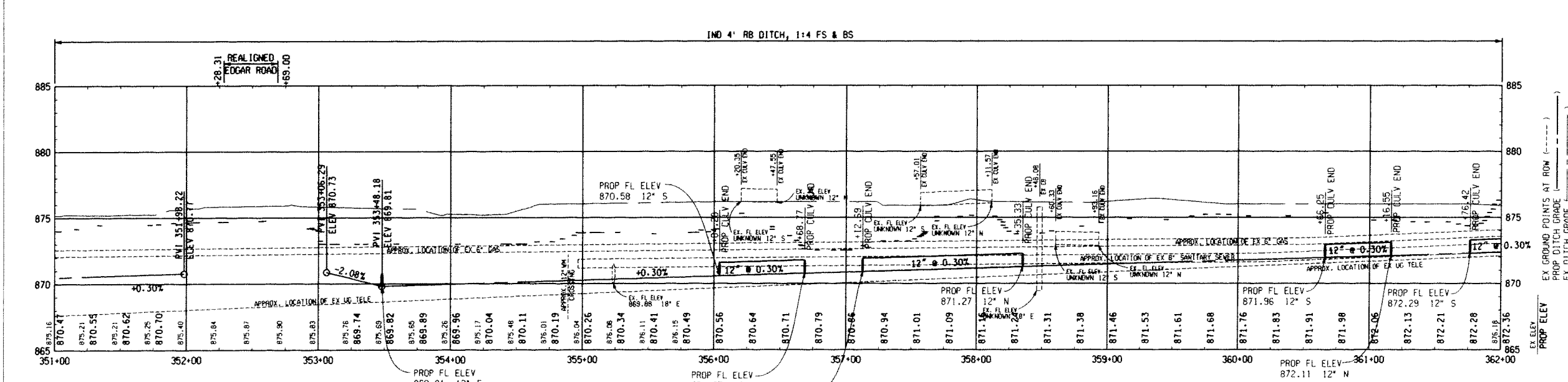
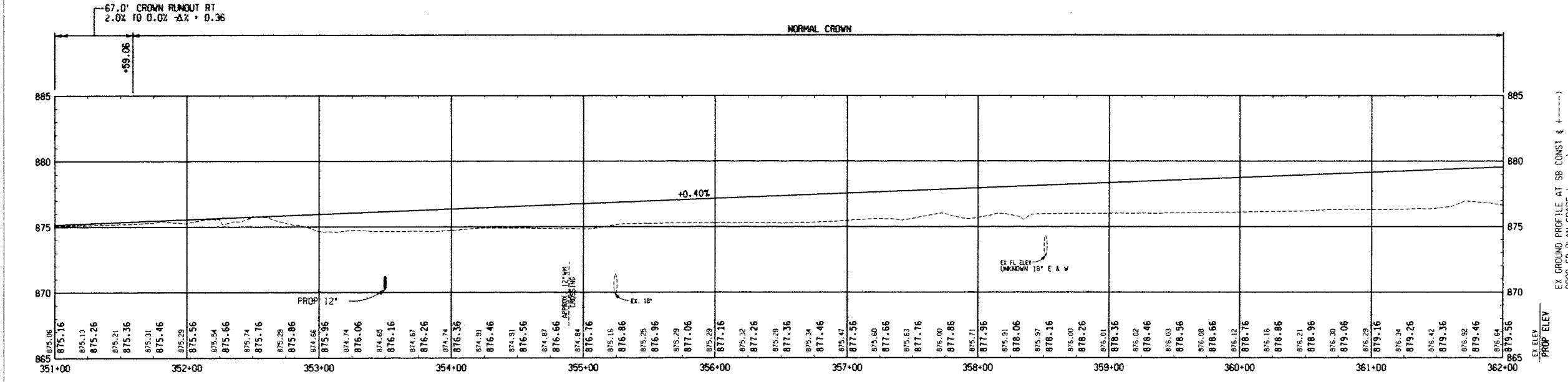
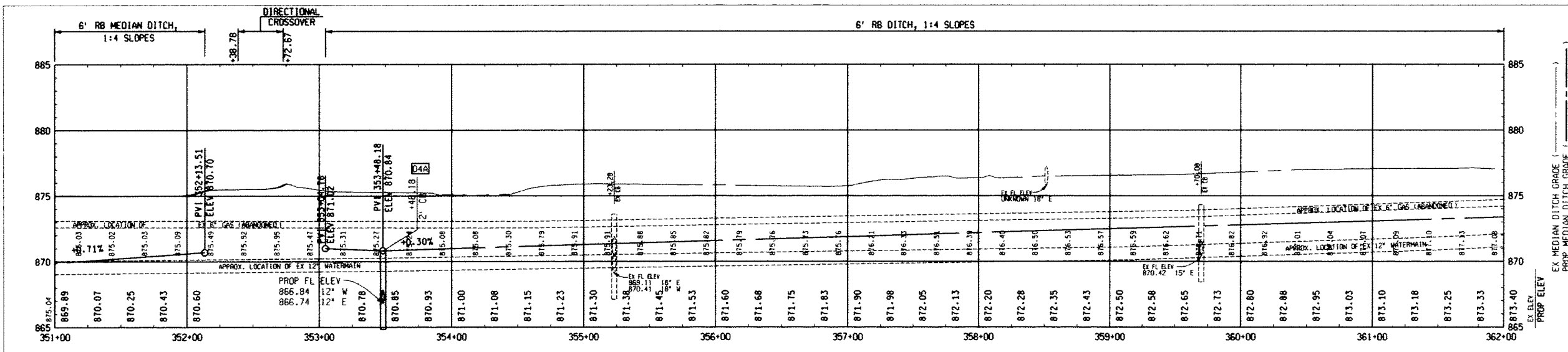
10906	Syd	Aggregate Base, 8 inch
425	Syd	Shoulder, CL 11, 6 inch
50	Ft	Culv, CL A, Conc, 12 inch
2	Eo	Culv End Sect, Conc, 12 inch
2	Eo	Dr Structure Cover, Adj, Case 1
6	Ft	Dr Structure Cover, Adj, Case 2
4400	Ft	Underdrain, Subgrade, 6 inch
400	Ft	Underdrain Outlet, 6 inch
16	Ft	Underdrain, Outlet Ending, 6 inch
2174	Ton	HMA, 2C
1087	Ton	HMA, 4E3
1087	Ton	HMA, 5E3
182	Ft	Curb and Gutter, Conc, Det B2
258	Ft	Curb and Gutter, Conc, Det F4
16154	Syd	Slope Restoration
1	Eo	Water Shutoff, Adj
3	Eo	Gate Well, Adj, Case 2

REV	DESCRIPTION	BY	DATE	CHK'D

DESIGNED: A. FLAK CHECKED: AJL
 SCALE: 1"=40'
 PART #1/200-12795-09001/CAO/SHEET/FILES/PLANS.DWG
 INGHAM COUNTY ROAD COMMISSION
 CEDAR STREET IMPROVEMENTS - HOLBROOK TO COLLEGE
 DELHI TOWNSHIP, MICHIGAN
CONSTRUCTION PLAN
CEDAR STREET
STA 351+00 TO 362+00

DIVISION	CONTRACT	SHEET
	12795-09001-N-1	23
		OF 100

EDGAR ROAD



EX. ELEV. PROP. ELEV.
 EX. GROUND PROFILE AT SB CONST. (---)
 PROP. SB PLAN GRADE (---)
 EX. MEDIAN DITCH GRADE (---)
 PROP. MEDIAN DITCH GRADE (---)

RIM ELEVATIONS ARE BASED ON ELEVATIONS AT EDGE OF PAVEMENT

REV	DESCRIPTION	BY	DATE	CHK'D

TETRA TECH

DESIGNED: R. SLOVAK CHECKED: AJL
 SCALE: 1"=40' CADD DATE: 04-15-09 RAZ 01
 PART 01/1010004/36/PROP.FL.ESSOUTH.DWG
 INGHAM COUNTY ROAD COMMISSION
 CEDAR STREET IMPROVEMENTS - HOLBROOK TO COLLEGE
 DELHI TOWNSHIP, MICHIGAN

SB PROFILE
CEDAR STREET
STA 351+00 TO 362+00

DIVISION: CONTRACT: 12795-09001-N-1 SHEET: 25 OF 100