ADDENDUM NO. 1

April 1, 2024

TRI-CREEK SCHOOL CORPORATION - HOLTZ ROAD IMPROVEMENTS
Lowell, IN 46356

TO: ALL BIDDERS OF RECORD

This Addendum forms a part of and modifies the Bidding Requirements, Contract Forms, Contract Conditions, the Specifications, and the Drawings dated March 19, 2024 by Torrenga Engineering. Acknowledge receipt of the Addendum in the space provided on the Bid Form. Failure to do so may subject the Bidder to disqualification.

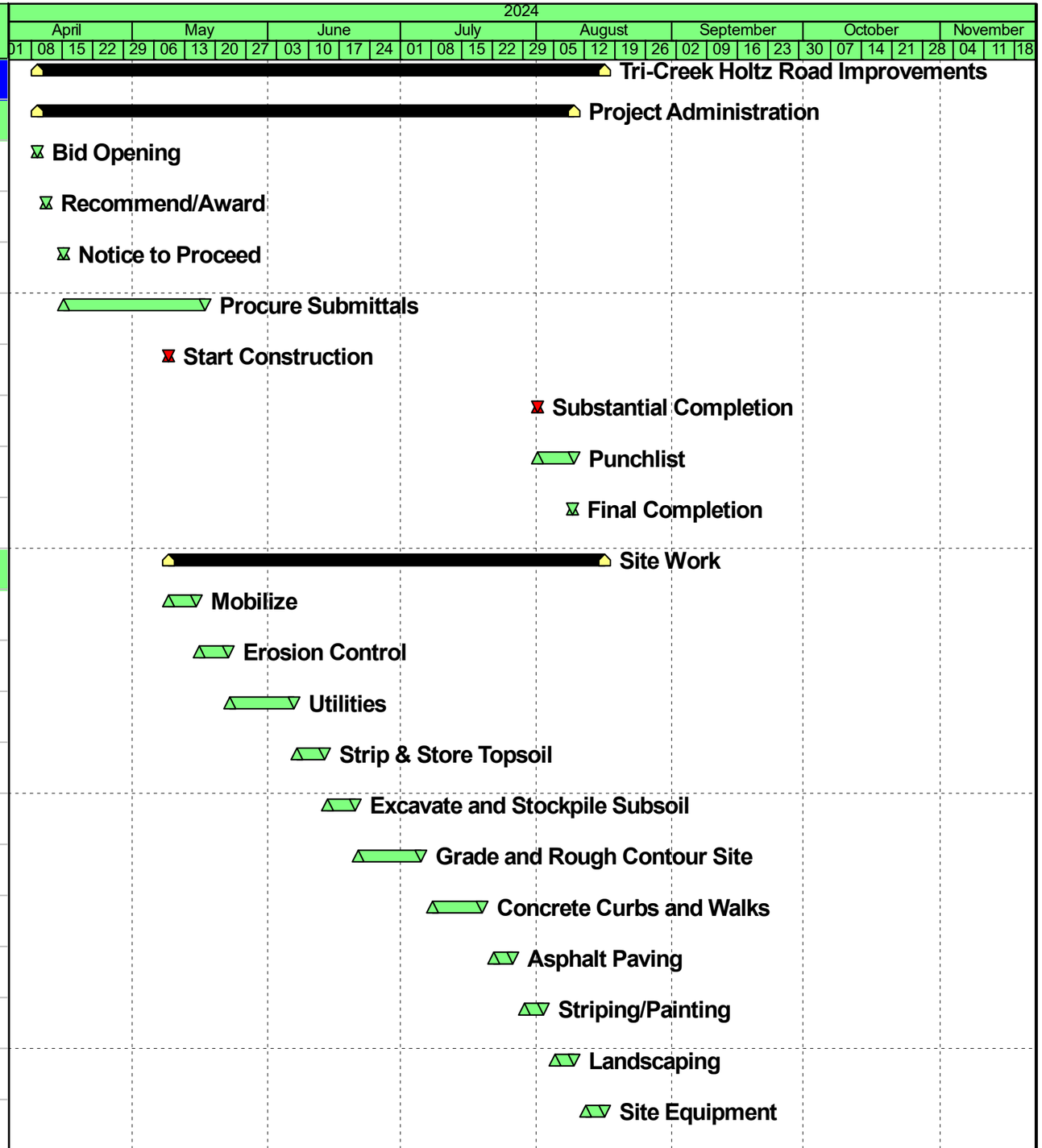
This Addendum consists of Pages ADD 1-1 and attached Addendum No. 1 from Torrenga Engineering dated March 28, 2024 and consisting of 1 page and 15 drawings.

A. SPECIFICATION SECTION 0 32 00 - SCHEDULES AND REPORTS

1. **Replace:**

   Guideline Schedule with that attached revised Guideline Schedule

Activity Name	Original Duration	Start	Finish
Tri-Creek Holtz Road Improvements	**92**	**Apr-09-2024**	**Aug-16-2024**
Project Administration	**87**	**Apr-09-2024**	**Aug-09-2024**
Bid Opening	0	Apr-09-2024	Apr-09-2024
Recommend/Award	0	Apr-11-2024	Apr-11-2024
Notice to Proceed	0	Apr-15-2024	Apr-15-2024
Procure Submittals	25	Apr-15-2024	May-17-2024
Start Construction	0	May-09-2024*	May-09-2024
Substantial Completion	0	Aug-01-2024*	Aug-01-2024
Punchlist	7	Aug-01-2024	Aug-09-2024
Final Completion	0	Aug-09-2024*	Aug-09-2024
Site Work	**70**	**May-09-2024**	**Aug-16-2024**
Mobilize	5	May-09-2024	May-15-2024
Erosion Control	5	May-16-2024	May-22-2024
Utilities	10	May-23-2024	Jun-06-2024
Strip & Store Topsoil	5	Jun-07-2024	Jun-13-2024
Excavate and Stockpile Subsoil	5	Jun-14-2024	Jun-20-2024
Grade and Rough Contour Site	10	Jun-21-2024	Jul-05-2024
Concrete Curbs and Walks	10	Jul-08-2024	Jul-19-2024
Asphalt Paving	5	Jul-22-2024	Jul-26-2024
Striping/Painting	5	Jul-29-2024	Aug-02-2024
Landscaping	5	Aug-05-2024	Aug-09-2024
Site Equipment	5	Aug-12-2024	Aug-16-2024



Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

222100.09 Tri-Creek Holtz Road Improvements
Guideline Schedule (ADD 1) Apr-09-2024
1 of 1

SKILLMAN

Torrenga Engineering, Inc.

REGISTERED PROFESSIONAL ENGINEERS

907 Ridge Road
Munster, IN 46321
Phone 219.836.8918
www.torrenga.com

PROJECT: **Addendum One**	1. **Addendum One** **Holtz Road Improvements** Lowell, Indiana Torrenga Project No.: 2023-5056
CONTRACT NO.:	2023-5056
SPEC SECTION:	
SHEET NO.:	C-2.1, C-2.2, C-2.2, & C-4.0

1. Sheet C-2.1 IMPROVEMENT PLAN

- 1" Pavement Resurfacing is revised to 1.5" Pavement Resurfacing

2. Sheet C-2.2 IMPROVEMENT PLAN

- 1" Pavement Resurfacing is revised to 1.5" Pavement Resurfacing

3. Sheet C-2.3 IMPROVEMENT PLAN

- 1" Pavement Resurfacing is revised to 1.5" Pavement Resurfacing

4. Sheet C-4.0 DETAILS & SPCIFICATIONS

- Milling Detail and Typical Pavement Resurfacing are added.

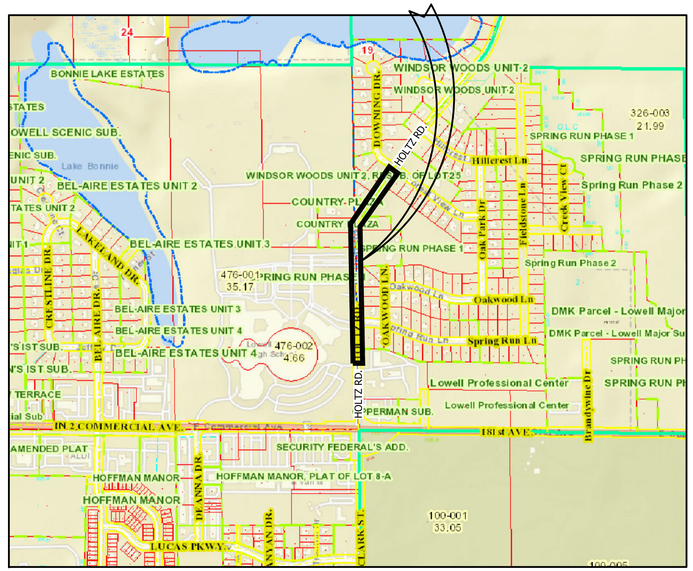
interoffice memorandum

FINAL ENGINEERING PLANS

HOLTZ ROAD IMPROVEMENTS, LOWELL, INDIANA

INDEX	
PAGE	DESCRIPTION
COVER	*TITLE PAGE*
C–1.0	*TOPOGRAPHY & EXISTING CONDITIONS*
C–1.1	*DEMOLITION PLAN*
C–2.0	*OVERALL PLAN & TYPICAL CROSS SECTIONS (1"=60')*
C–2.1 TO C–2.3	*IMPROVEMENT PLAN (1" = 20')*
C–3.1 TO C–3.3	*PAVEMENT MARKING PLAN & PROFILE*
C–3.4 TO C–3.5	*CROSS SECTIONS*
C–4.0	*DETAILS & SPECIFICATIONS*
C–5.0	*STORM WATER POLLUTION PREVENTION PLAN*
C–5.1	*STORM WATER POLLUTION PREVENTION PLAN DETAILS*

SUBJECT AREA



VICINITY MAP
NOT TO SCALE

NORTH

Indiana 811
Know what's **below.** **Call** before you dig.

"IT'S THE LAW"
CALL 2 WORKING DAYS BEFORE YOU DIG
811 or 1-800-382-5544
CALL TOLL FREE
PER INDIANA STATE LAW IC8-1-26, IT IS AGAINST THE LAW TO EXCAVATE WITHOUT NOTIFYING THE UNDERGROUND LOCATION SERVICE TWO (2) WORKING DAYS BEFORE COMMENCING WORK.

CLIENT/OWNER:

Client/Owner:
Tri–Creek School Corporation
19290 Cline Avenue
Lowell, IN 46356
(219)696–6661

PREPARED BY:
Torrenga Engineering, Inc.
907 Ridge Road
Munster, Indiana 46321
(219)836–8918

County: *Lake*

SE ***Qtr., Sec.*** *24* , ***T.*** *33* ***N, R.*** *9* ***W.***

Township: *LOWELL–CEDAR CREEK*

DATE AND REVISIONS:

NO.	DATE	DESCRIPTION	BY
1	03-11-2024	PRIMARY SUBMITTAL	DT/NM/EM

DRAWING SET PROGRESS:
- ☐ ENGINEERING PLAN - FOR REVIEW / APPROVAL
- ☒ FINAL ENGINEERING - FOR CONSTRUCTION

BENCHMARKS:

TBM #1
EXISTING NORTH RIM OF INLET LOCATED AT STATION 12+47, 39 FT LEFT, ELEVATION = 696.61

TBM #2
EXISITNG NORTH RIM OF SANITARY MANHOLE LOCATED AT STATION 13+25, 25 FT LEFT, ELEVATION = 697.47

ALL VERTICAL DATUM IS BASED ON NAVD 88

NOTES:

ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF THE FOLLOWING, EXCEPT AS MODIFIED HERIN OR ON THE [LANS:

–STANDARD SPECIFICATIONS, INDIANA DEPARTMENT OF TRANSPORTAION, LATEST EDITION, (INDOT SS) FOR ALLIMPROVEMENTS.

–INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT REGULATIONS

–TOWN OF LOWELL, INDIANA MUNICIPAL REGULATIONS AND STANDARDS

IN CASE OF CONFLICTS BETWEEN THE APPLICABLE ORDINANCES NOTED, THE MORE STRINGENT SHALL TAKE PRECEDENCE AND SHALL CONTROL ALL CONSTRUCTION.

DRAINAGE CERTIFICATION

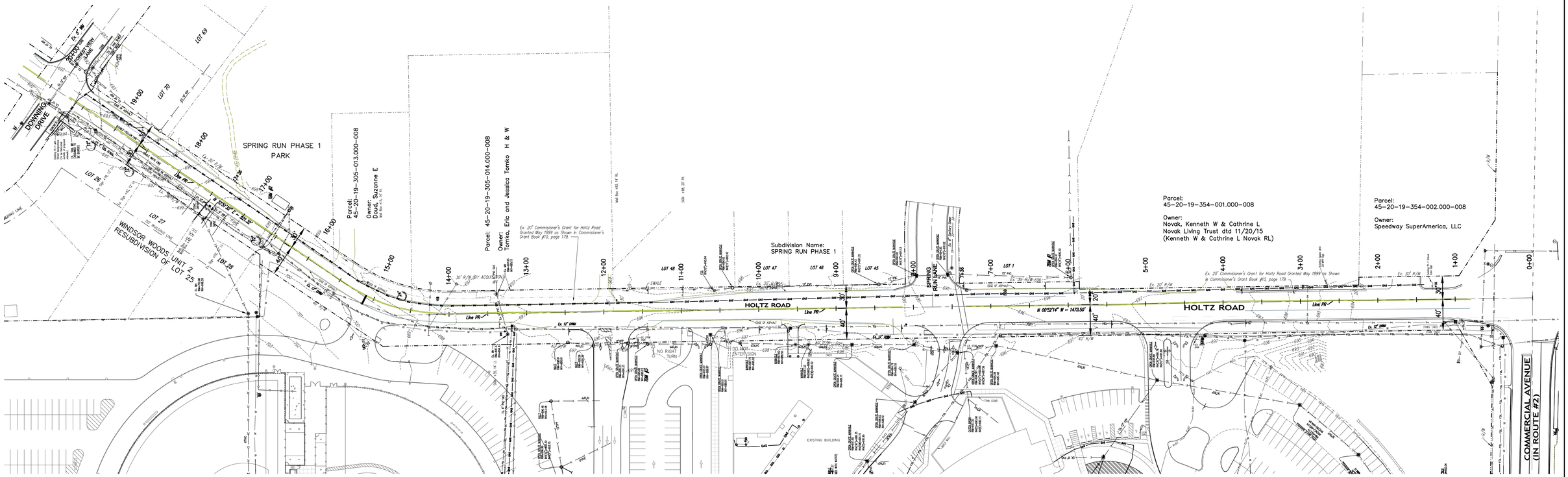
I HEREBY CERTIFY THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE DRAINAGE OF SURFACE WATERS WILL NOT BE CHANGED BY THE CONSTRUCTION OF SAID IMPROVEMENTS OR ANY PART THEREOF, OR, THAT IF SUCH SURFACE WATER DRAINAGE WILL BE CHANGED, REASONABLE PROVISION HAS BEEN MADE FOR COLLECTION AND DIVERSION OF SUCH SURFACE WATERS INTO PUBLIC AREA, OR DRAINS WHICH THE OWNER HAS A RIGHT TO USE AND THAT SUCH SURFACE WATERS WILL BE PLANNED FOR IN ACCORDANCE WITH GENERALLY ACCEPTED ENGINEERING PRACTICES SO AS TO REDUCE THE LIKELIHOOD OF DAMAGE TO THE ADJOINING PROPERTIES BECAUSE OF THE CONSTRUCTION OF THE IMPROVEMENTS.

CERTIFIED BY: DONALD C. TORRENGA
P.E. # 19868

DONALD C. TORRENGA REGISTERED No. 19868 STATE OF INDIANA PROFESSIONAL ENGINEER

Donald C. Torrenga

Z:\2023-5013 Lowell High School - Lowell\dwg\Holtz Road (3).dwg 3/11/2024 1:28:02 PM CDT



NOTES:

TBM #1 – NORTH RIM OF EXISTING OPEN GRATE MANHOLE @ STATION 5+96, 35' RT., ELEVATION = 694.41

TBM #2 – NORTHWEST CORNER OF CONCRETE PAD FOR ELECTRIC @ STATION 16+82, 35' RT, ELEVATION = 698.75

TBM #3 – NORTH RIM OF EXISTING OPEN GRATE MANHOLE @ STATION 11+43, 42' LT., ELEVATION = 695.83

LEGEND:

EXISTING

- MANHOLE
- CATCH BASIN/INLET
- REARYARD DRAIN
- CURB DRAIN
- FIBER OPTIC MANHOLE
- TRAFFIC LIGHT POLE
- TRAFFIC MANHOLE
- LIGHT POLE
- POWER POLE
- GUY WIRE/GUY POLE
- TELEPHONE PEDESTAL
- CABLE TV PEDESTAL
- WATER VALVE
- FIRE HYDRANT
- B-BOX
- SIGN or BILLBOARD
- STOP SIGN
- CLEAN OUT
- STEEL BOLLARD
- PIPE INLET/OUTLET
- DRAIN
- ELECTRIC TRANSFORMER
- ELECTRIC OUTLET
- ELECTRIC PANEL/BOX
- ELECTRIC MANHOLE
- FOUND ROW MARKER
- SUPPORT COLUMN
- INTERCOM
- I BEAM
- FOUL POLE
- UTILITY STUB
- PIPELINE MARKER
- TELEPHONE MANHOLE
- TELEPHONE MANHOLE
- GROUND LIGHT
- GAS VALVE
- LIGHTING MANHOLE
- MONITORING WELL
- OVERHEAD LINES
- WATER LINE PAINTED/FLAGGED (BLUE)
- ELEC. LINE PAINTED/FLAGGED (RED)
- COMMUNICATION/FIBER OPTIC LINE PAINTED/FLAGGED (ORANGE)
- GAS LINE PAINTED/FLAGGED (YELLOW)
- SEWER LINE PAINTED/FLAGGED (GREEN)
- WOOD FENCE
- CHAINLINK FENCE
- HAND/GUARD RAIL
- SANITARY SEWER
- STORM SEWER
- WATER MAIN
- RIGHT-OF-WAY LINE
- PROPERTY LINE

DONALD C. TORRENGA
REGISTERED
No. 19868
STATE OF INDIANA
PROFESSIONAL ENGINEER

Donald C. Torrenga

NORTH

GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.

CLIENT:
Tri-Creek School Corporation
19290 Cline Avenue
Lowell, Indiana 46356

JOB NO: 2023-5056

SCALE: 1" = 60'

REVISIONS:

DATE: 03-11-2024

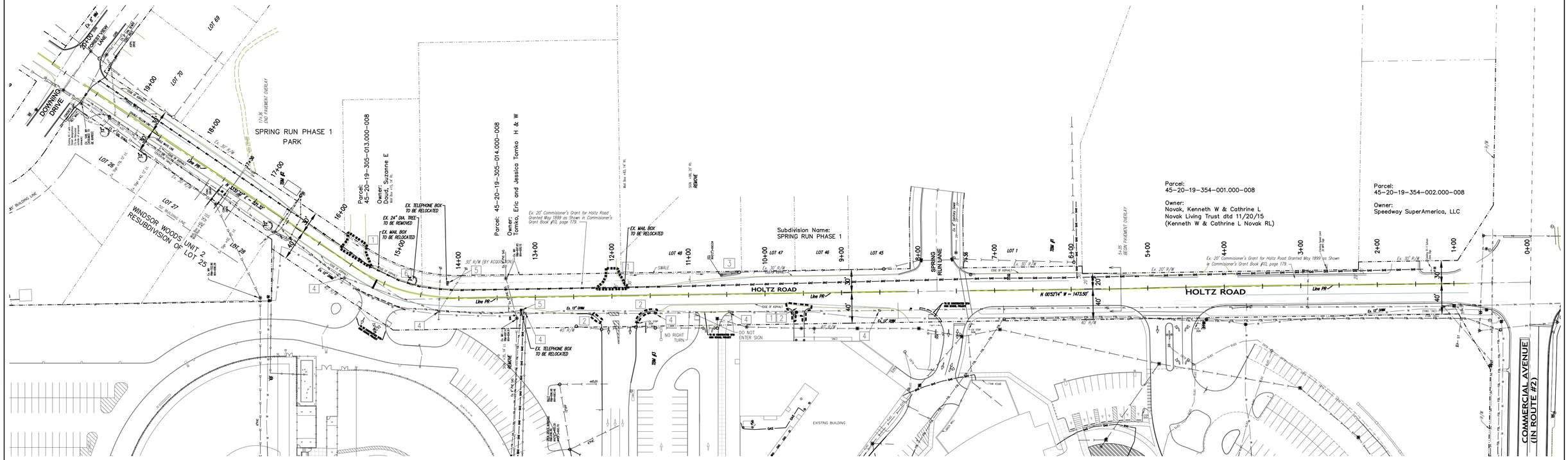
HOLTZ ROAD – IMPROVEMENTS
LOWELL, INDIANA

TOPOGRAPHY & EXISTING CONDITION

TORRENGA ENGINEERING, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
907 RIDGE ROAD, MUNSTER, INDIANA 46321
Tel. No.: (219) 836-8918 website: www.torrenga.com

SHEET

C-1.0



NOTES:

1. THE CONTRACTOR IS RESPONSIBLE TO VERIFY ALL EXISTING SITE CONDITIONS AND SHALL NOTIFY THE ARCHITECT/ENGINEER IMMEDIATELY OF ANY DISCREPANCIES BETWEEN THE EXISTING CONDITIONS AND ALL PROPOSED IMPROVEMENTS IN THE CONSTRUCTION DRAWINGS.

2. THE CONTRACTOR IS RESPONSIBLE FOR THE RELOCATION OF ANY MAILBOXES THAT ARE LOCATED IN THE EXPANDED ROADWAY.

3. THE RE-LOCATION OF THE EXISTING TELEPHONE BOXES AND THE POWER POLES WITH OVERHEAD LINES SHALL BE COORDINATED BY THE CONTRACTOR WITH THE APPROPRIATE UTILITY COMPANIES.

DEMOLITION NOTES

1. REMOVE ASPHALT PAVEMENT
2. REMOVE CONCRETE CURB
3. REMOVE STORM SEWER & END SECTION
4. REMOVE/RELOCATE POWER POLE/LIGHT POLE AND ITS ENTIRETY COORDIANTE WITH NIPSCO
5. REMOVE/RELOCATE TELEPHONE PEDESTAL, COORDIANTE WITH AT&T
6. REMOVE TREE

DONALD C. TORRENGA
REGISTERED
No. 19868
STATE OF INDIANA
PROFESSIONAL ENGINEER

NORTH

GRAPHIC SCALE
60 0 30 60 120 240
(IN FEET)
1 inch = 60 ft.

CLIENT:
Tri-Creek School Corporation
19290 Cline Avenue
Lowell, Indiana 46356

JOB NO: 2023-5056

SCALE: 1" = 60'

REVISIONS:
DATE: 03-11-2024

HOLTZ ROAD - IMPROVEMENTS
LOWELL, INDIANA

DEMOLITION PLAN

TORRENGA ENGINEERING, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
907 RIDGE ROAD, MUNSTER, INDIANA 46321
Tel. No.: (219) 836-8918 website: www.torrenga.com

SHEET
C-1.1

FILE NO:Z:\2023-5013 Lowell High School - Lowell\dwg\Holtz Road (3).dwg 3/11/2024 12:802 PM CDT

LEGEND PROPOSED

2' WIDE X 6" DEEP STONE SHOULDER

5' WIDE CONCRETE SIDEWALK

TYPICAL PAVEMENT SECTION (SEE DETAIL)

TACK COAT AND 1.5" PAVEMENT RESURFACING STATION 5+35 TO 17+36

AD-1

DOWNING DRIVE

FOREST VIEW LANE

20+00

19+00

18+00

17+00

16+00

15+00

14+00

13+00

LOT 70

LOT 26

LOT 27

LOT 28

WINDSOR WOODS UNIT 2
RESUBDIVISION OF LOT 25

SPRING RUN PHASE 1
PARK

17+36
END PAVEMENT OVERLAY

ASPHALT PATH

Parcel:
45-20-19-305-013.000-008

Owner:
Doud, Suzanne E
Mail Box +15, 14' Rt.

Parcel: 45-20-19-305-014.000-008

Owner:
Tomko, Eric and Jessica Tomko H & W

EX. SAN. MH
RIM=697.59
ADJUST RIM
TO 696.80

TBM #2

N 33°51'32" E ~ 321.32'

Line PR

30-FT RIGHT-OF-WAY

40-FT RIGHT-OF-WAY

2-FT WIDE SHOULDER

ALTERNATE 5-FT. SIDEWALK

5-FT. SIDEWALK

TO BE CONSTRUCTED WITH HIGH SCHOOL PROJECT

MATCH

CONCRETE RET. WALL

Existing Rt-1 with Street designations (To be Relocated outside of proposed sidewalk)

SINGLE WHITE LINE

DOUBLE-YELLOW LINE

CENTERLINE SWALE

CONC. DRIVE

CONC. WALK

CURB

EX. 12" RCP

EX. 15" RCP

EX. 18" RCP

EX. 10" CMP

692.64

693.90

694.60

696.50

697.45

698.37

699.05

698.90 MATCH

698.00 MATCH

699.15 MATCH

699.30 MATCH

699.35

699.30

699.75

699.18

699.20

699.10

699.20

699.05

699.20

698.88

698.18

697.75

697.18

698.66

699.60

698.70

697.80

697.05

699.30

699.25

699.00

697.35

R100.00'

R100.00'

Ex. Sign +79, 12' Lt.

Ex. Sign +42, 12' Lt.

Ex. Sign +42, 14' Lt.

Mail Box +42, 14' Lt.

Mail Box +40, 14' Lt.

Ex. Sign +02, 12' Lt.

NOTE:

1) THE EXISTING POWER POLES AND OVERHEAD LINES SHALL BE COORDINATED WITH NIPSCO FOR RELOCATION.

2) THE EXISTING TELEPHONE PEDESTALS THAT INTERFERE WITH THE ROADWAY WIDENING SHALL BE COORDINATED WITH AT&T FOR RELOCATION.

DONALD C. TORRENGA
REGISTERED
No. 19868
STATE OF INDIANA
PROFESSIONAL ENGINEER

NORTH

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

CLIENT:
Tri-Creek School Corporation
19290 Cline Avenue
Lowell, Indiana 46356

JOB NO: 2023-5056

SCALE: 1" = 20'

03-28-2024 AD-1
REVISIONS:
DATE: 03-11-2024

HOLTZ ROAD - IMPROVEMENTS
LOWELL, INDIANA

IMPROVEMENT PLAN

TORRENGA ENGINEERING, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
907 RIDGE ROAD, MUNSTER, INDIANA 46321
Tel. No.: (219) 836-8918 website: www.torrenga.com

SHEET
C-2.1

FILE NO:Z:\2023-5013 Lowell High School - Lowell\dwg\Holtz Road (3).dwg 3/11/2024 12:802 PM CDT

Owner: Tomko, Eric

Subdivision Name:
SPRING RUN PHASE 1

13+00 | 12+00 | 11+00 | 10+00 | 9+00 | 8+00 | 7+36 | 7+00

LOT 48 | LOT 47 | LOT 46 | LOT 45 | LOT 1

HOLTZ ROAD

SPRING RUN LANE

Line PR

Ex. MH
RIM=697.65
INV=695.15
ADJUST RIM TO MATCH PAVEMENT ELEVATION

25' ~ 12" PVC
W/ END SECTION
@ 0.22%

2-FT. WIDE SHOULDER | 30-FT RIGHT-OF-WAY | SWALE | 2-FT. WIDE SHOULDER | INV. | EDGE OF ASPHALT

40-FT RIGHT-OF-WAY | 2-FT. WIDE SHOULDER | SIDEWALK | 5-FT SIDEWALK | NO RIGHT TURN | TO BE CONSTRUCTED WITH HIGH SCHOOL PROJECT | DO NOT ENTER SIGN | 2-FT. WIDE SHOULDER | 40-FT RIGHT-OF-WAY | TO BE CONSTRUCTED WITH HIGH SCHOOL PROJECT | EX. STOP SIGN

R100.00' | R35.00' | R25.00'

TBM #3

Ex. 8" Sanitary Sewer

Ex. 6" PVC SAS

INLET
RIM=696.48
INV=693.48

10"CPP | 12"CPP

MANHOLE

EXISTING BUILDING

BRICK WALL

CONC.

LEGEND PROPOSED

- 2' WIDE X 6" DEEP STONE SHOULDER
- 5' WIDE CONCRETE SIDEWALK
- TYPICAL PAVEMENT SECTION (SEE DETAIL)
- TACK COAT AND 1.5" PAVEMENT RESURFACING STATION 5+35 TO 17+36 (AD-1)

DONALD C. TORRENGA REGISTERED No. 19868 STATE OF INDIANA PROFESSIONAL ENGINEER

NORTH

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

CLIENT: Tri-Creek School Corporation, 19290 Cline Avenue, Lowell, Indiana 46356	03-28-2024 AD-1	HOLTZ ROAD – IMPROVEMENTS, LOWELL, INDIANA	TORRENGA ENGINEERING, INC.
JOB NO: 2023-5056	REVISIONS:	IMPROVEMENT PLAN	CONSULTING ENGINEERS & LAND SURVEYORS
SCALE: 1" = 20'	DATE: 03-11-2024		907 RIDGE ROAD, MUNSTER, INDIANA 46321
			Tel. No.: (219) 836-8918 website: www.torrenga.com

SHEET C-2.2

FILE NO: Z:\2023-5013 Lowell High School - Lowell\dwg\Holtz Road (3).dwg 3/11/2024 1:28:02 PM CDT

Owner:
Novak, Kenneth W & Cathrine L
Novak Living Trust dtd 11/20/15
(Kenneth W & Cathrine L Novak RL)

Owner:
Speedway SuperAmerica, LLC

HOLTZ ROAD

LOT 1

5+35 BEGIN PAVEMENT OVERLAY

7+36

7+00

6+00

5+00

4+00

3+00

2+00

1+00

Existing Speed Limit 20 MPH Sign

Existing S1-1 School Zone Sign

20-FT RIGHT-OF-WAY

30-FT RIGHT-OF-WAY

40-FT RIGHT-OF-WAY

Line PR

EDGE OF ASPHALT

N 00°52'14" W ~ 1473.50'

30.0

70.0

40.0

20.0

10.8'

10.7'

11.6'

10.4'

10.6'

10.5'

OHL

FOL

CONC. SWALE

CONC. WALK

EX. STOP SIGN

EX. STOP SIGN

STOP SIGN

BRICK WALL

ST

LEGEND PROPOSED

2' WIDE X 6" DEEP STONE SHOULDER

5' WIDE CONCRETE SIDEWALK

TYPICAL PAVEMENT SECTION (SEE DETAIL)

TACK COAT AND 1.5" PAVEMENT RESURFACING
STATION 5+35 TO 17+36

AD-1

NORTH

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

DONALD C. TORRENGA
REGISTERED
No. 19868
STATE OF INDIANA
PROFESSIONAL ENGINEER

CLIENT: Tri-Creek School Corporation 19290 Cline Avenue Lowell, Indiana 46356 JOB NO: 2023-5056 SCALE: 1" = 20'	03-28-2024 AD-1 REVISIONS: DATE: 03-11-2024	HOLTZ ROAD – IMPROVEMENTS LOWELL, INDIANA IMPROVEMENT PLAN	TORRENGA ENGINEERING, INC. CONSULTING ENGINEERS & LAND SURVEYORS 907 RIDGE ROAD, MUNSTER, INDIANA 46321 Tel. No.: (219) 836-8918 website: www.torrenga.com	SHEET C-2.3

FILE NO:Z:\2023-5013 Lowell High School - Lowell\dwg\Holtz Road (3).dwg 3/11/2024 12:02 PM CDT

Owner:
Novak, Kenneth W & Cathrine L
Novak Living Trust dtd 11/20/15
(Kenneth W & Cathrine L Novak RL)

Owner:
Speedway SuperAmerica, LLC

HOLTZ ROAD

LOT 1

5+35 BEGIN PAVEMENT OVERLAY

7+36

7+00

6+00

5+00

4+00

3+00

2+00

1+00

Existing Speed Limit 20 MPH Sign

Existing S1-1 School Zone Sign

20-FT RIGHT-OF-WAY

30-FT RIGHT-OF-WAY

40-FT RIGHT-OF-WAY

EDGE OF ASPHALT

N 00°52'14" W ~ 1473.50'

Line PR

30.0

70.0

40.0

20.0

10.8'

10.7'

11.6'

10.4'

10.6'

10.5'

OHL

FOL

CONC. SWALE

CONC. WALK

EX. STOP SIGN

STOP SIGN

BRICK WALL

ST

LEGEND PROPOSED

- 2' WIDE X 6" DEEP STONE SHOULDER
- 5' WIDE CONCRETE SIDEWALK
- TYPICAL PAVEMENT SECTION (SEE DETAIL)
- TACK COAT AND 1" PAVEMENT RESURFACING STATION 5+35 TO 17+36

DONALD C. TORRENGA
REGISTERED
No. 19868
STATE OF INDIANA
PROFESSIONAL ENGINEER

NORTH

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

CLIENT: Tri-Creek School Corporation, 19290 Cline Avenue, Lowell, Indiana 46356 JOB NO: 2023-5056 SCALE: 1" = 20'	REVISIONS: DATE: 03-11-2024	HOLTZ ROAD – IMPROVEMENTS LOWELL, INDIANA IMPROVEMENT PLAN	TORRENGA ENGINEERING, INC. CONSULTING ENGINEERS & LAND SURVEYORS 907 RIDGE ROAD, MUNSTER, INDIANA 46321 Tel. No.: (219) 836-8918 website: www.torrenga.com	SHEET C-2.3

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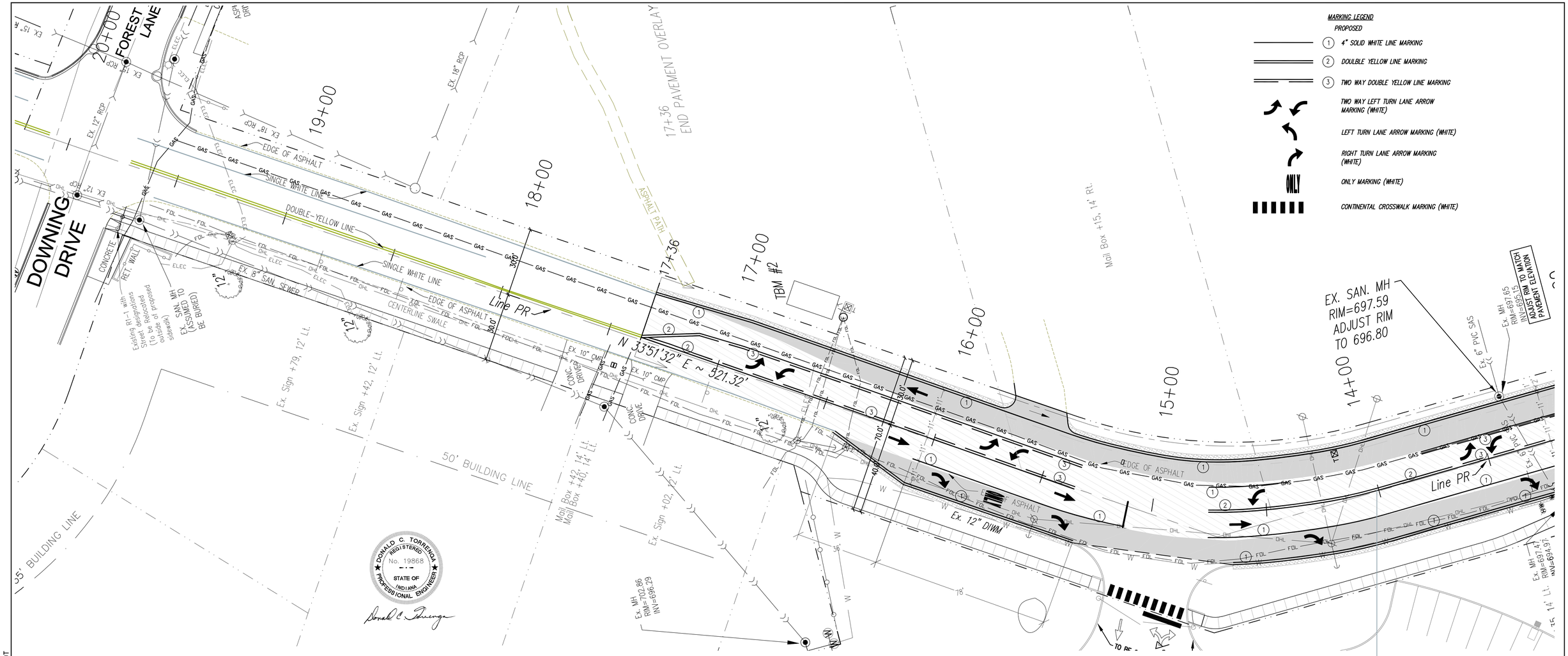
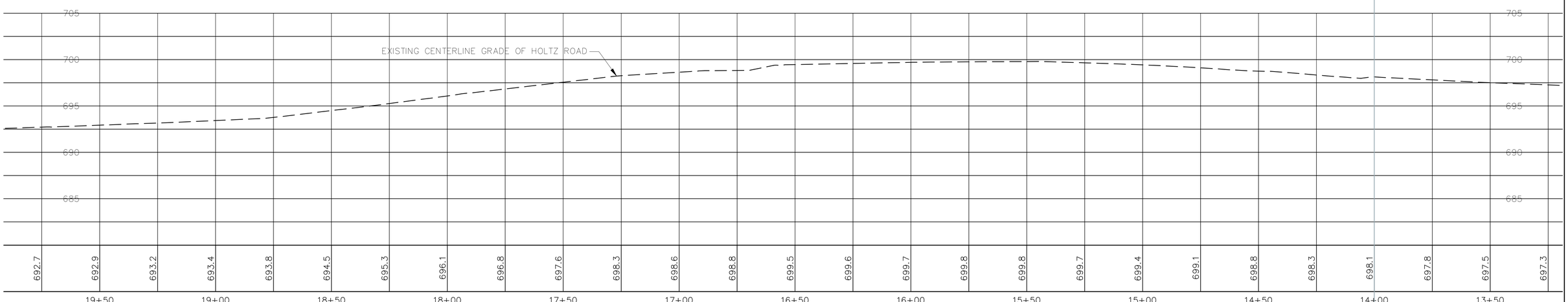




NORTH

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)

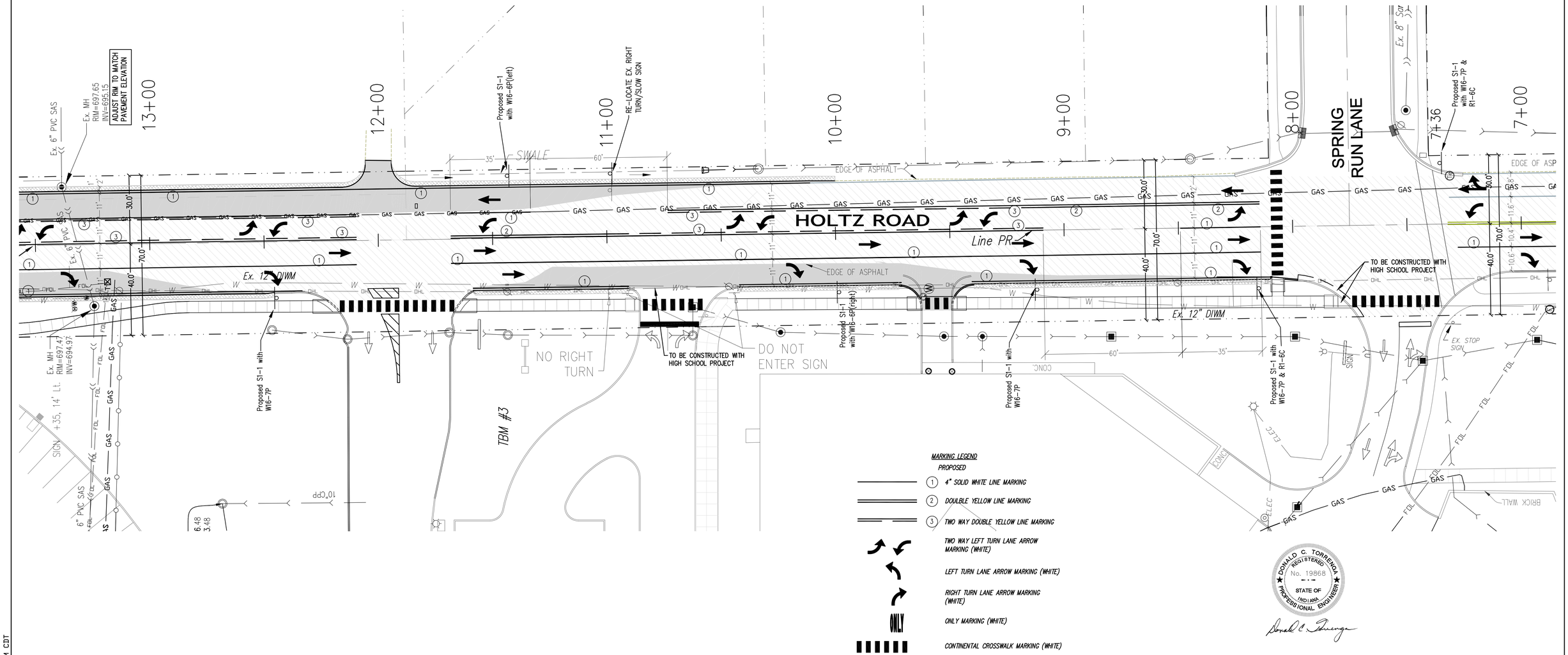
1 inch = 20 ft.

DONALD C. TORRENGA REGISTERED No. 19868 STATE OF INDIANA PROFESSIONAL ENGINEER

Donald C. Torrenga

CLIENT: Tri-Creek School Corporation 19290 Cline Avenue Lowell, Indiana 46356		HOLTZ ROAD – IMPROVEMENTS LOWELL, INDIANA	TORRENGA ENGINEERING, INC. CONSULTING ENGINEERS & LAND SURVEYORS 907 RIDGE ROAD, MUNSTER, INDIANA 46321 Tel. No.: (219) 836-8918 website: www.torrenga.com
JOB NO: 2023-5056	REVISIONS:		
SCALE: 1" = 20'	DATE: 03-11-2024	PAVEMENT MARKING PLAN & STREET PROFILE	SHEET C-3.1

FILE NO: Z:\2023-5013 Lowell High School - Lowell\dwg\Holtz Road (3).dwg 3/11/2024 12:02 PM CDT



MARKING LEGEND

PROPOSED

1. 4" SOLID WHITE LINE MARKING
2. DOUBLE YELLOW LINE MARKING
3. TWO WAY DOUBLE YELLOW LINE MARKING

TWO WAY LEFT TURN LANE ARROW MARKING (WHITE)

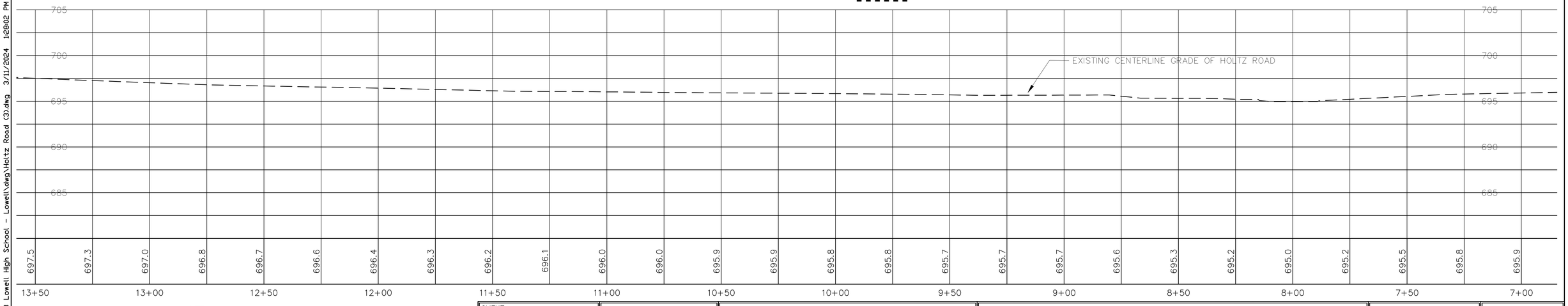
LEFT TURN LANE ARROW MARKING (WHITE)

RIGHT TURN LANE ARROW MARKING (WHITE)

ONLY MARKING (WHITE)

CONTINENTAL CROSSWALK MARKING (WHITE)

DONALD C. TORRENGA REGISTERED No. 19868 STATE OF INDIANA PROFESSIONAL ENGINEER



NORTH

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

CLIENT:
Tri-Creek School Corporation
19290 Cline Avenue
Lowell, Indiana 46356

JOB NO: 2023-5056

SCALE: 1" = 20'

REVISIONS:
DATE: 03-11-2024

HOLTZ ROAD - IMPROVEMENTS
LOWELL, INDIANA

PAVEMENT MARKING PLAN & STREET PROFILE

TORRENGA ENGINEERING, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
907 RIDGE ROAD, MUNSTER, INDIANA 46321
Tel. No.: (219) 836-8918 website: www.torrenga.com

SHEET
C-3.2

FILE NO:Z:\2023-5013 Lowell High School - Lowell\dwg\Holtz Road (3).dwg 3/11/2024 1:28:02 PM CDT

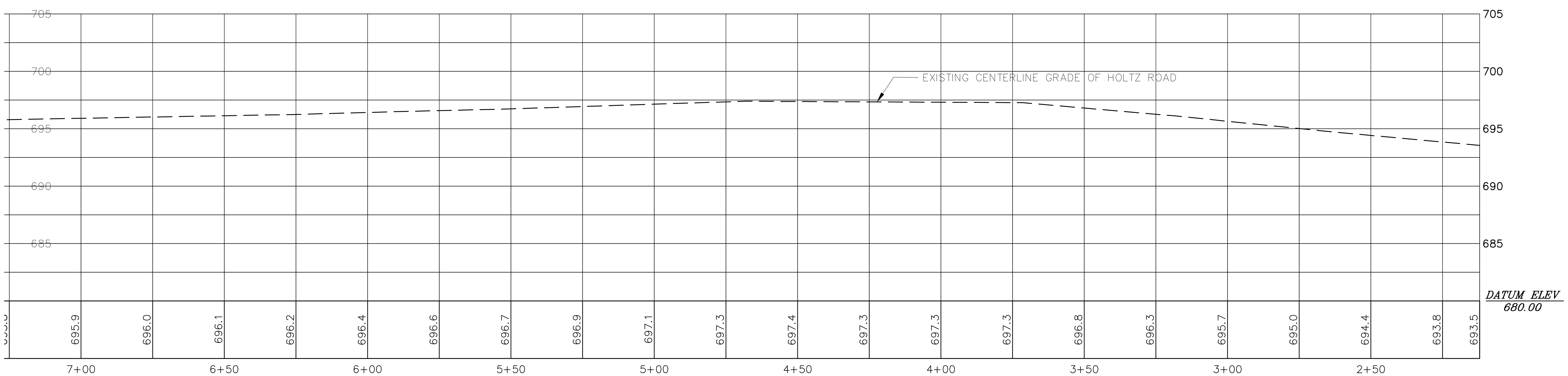
MARKING LEGEND

PROPOSED

1. 4" SOLID WHITE LINE MARKING
2. DOUBLE YELLOW LINE MARKING
3. TWO WAY DOUBLE YELLOW LINE MARKING

- TWO WAY LEFT TURN LANE ARROW MARKING (WHITE)
- LEFT TURN LANE ARROW MARKING (WHITE)
- RIGHT TURN LANE ARROW MARKING (WHITE)
- ONLY MARKING (WHITE)
- CONTINENTAL CROSSWALK MARKING (WHITE)

DONALD C. TORRENGA REGISTERED No. 19868 STATE OF INDIANA PROFESSIONAL ENGINEER



NORTH

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

CLIENT:
Tri-Creek School Corporation
19290 Cline Avenue
Lowell, Indiana 46356

JOB NO: 2023-5056

SCALE: 1" = 20'

REVISIONS:

DATE: 03-11-2024

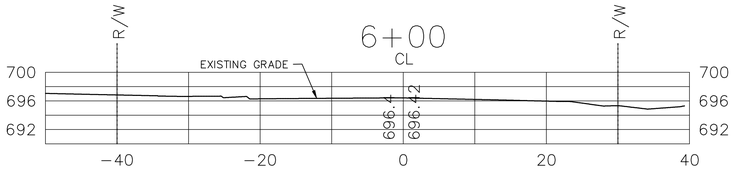
HOLTZ ROAD - IMPROVEMENTS
LOWELL, INDIANA

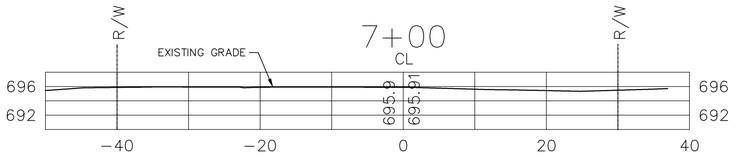
PAVEMENT MARKING PLAN & STREET PROFILE

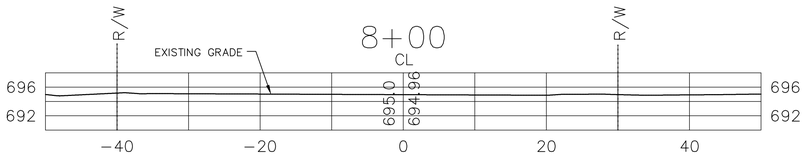
TORRENGA ENGINEERING, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
907 RIDGE ROAD, MUNSTER, INDIANA 46321
Tel. No.: (219) 836-8918 website: www.torrenga.com

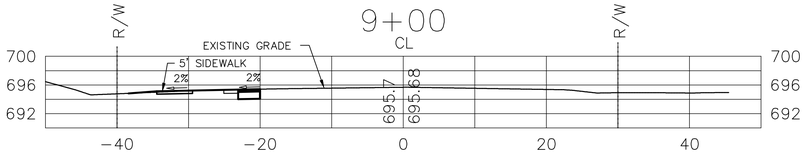
SHEET
C-3.3

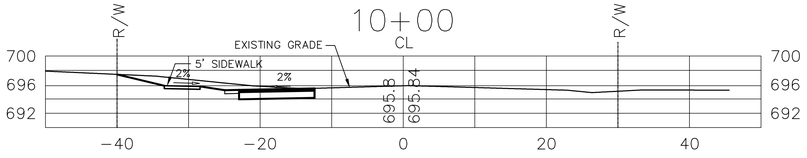
FILE NO:Z:\2023-5013 Lowell High School - Lowell\dwg\Holtz Road (3).dwg 3/11/2024 1:28:02 PM CDT

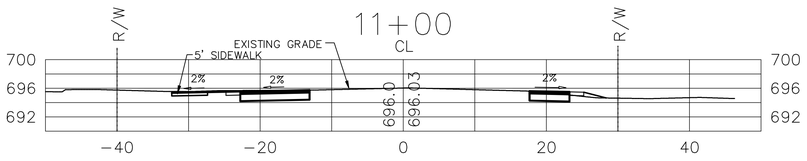


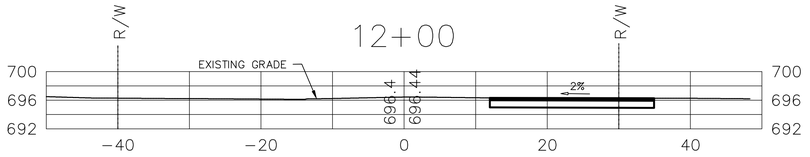


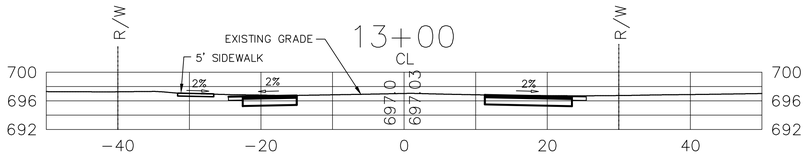


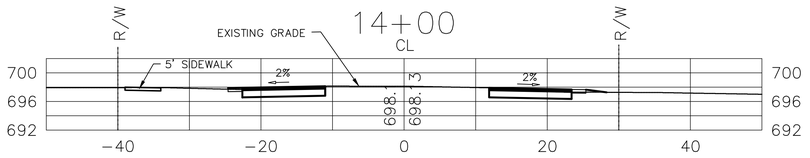


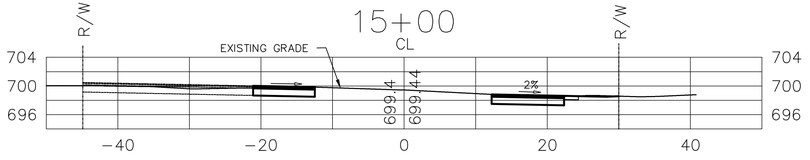


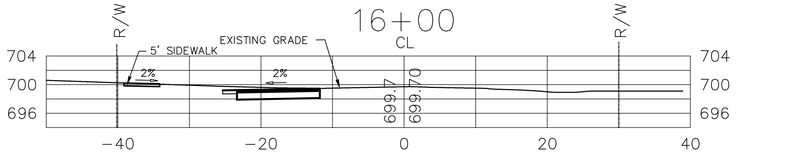


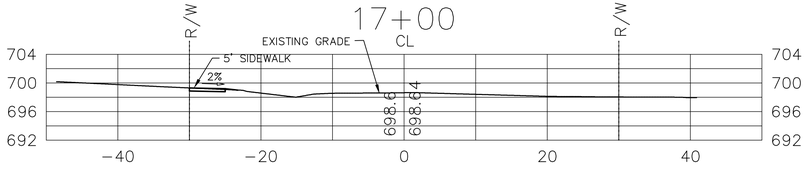












FILE NO:Z:\2023-5013 Lowell High School - Lowell\dwg\Holtz Road - Cross-Section.dwg 12/8/2023 2:38:57 PM CST

CLIENT:
Tri-Creek School Corporation
19290 Cline Avenue
Lowell, Indiana 46356

JOB NO: 2023-5056

SCALE: 1" = 10'

REVISIONS:

DATE: 03-11-2024

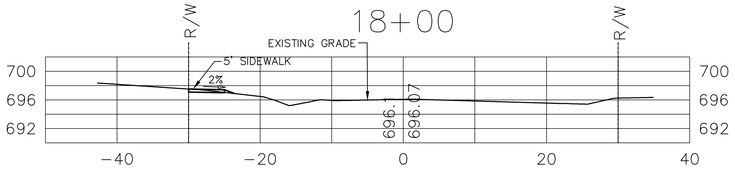
HOLTZ ROAD - IMPROVEMENTS
LOWELL, INDIANA

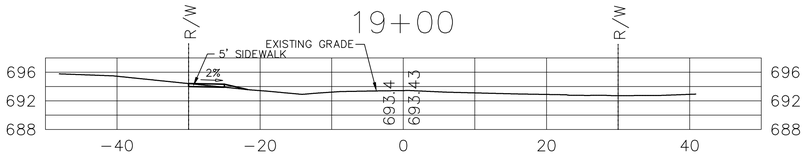
CROSS SECTIONS

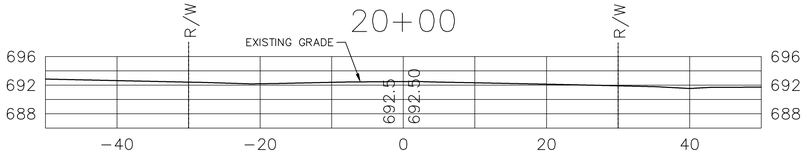
TORRENGA ENGINEERING, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
907 RIDGE ROAD, MUNSTER, INDIANA 46321
Tel. No.: (219) 836-8918 website: www.torrenga.com

SHEET

C-3.4







DONALD C. TORRENGA REGISTERED No. 19868 STATE OF INDIANA PROFESSIONAL ENGINEER

Donald C. Torrenga

CLIENT:
Tri-Creek School Corporation
19290 Cline Avenue
Lowell, Indiana 46356

JOB NO: 2023-5056

SCALE: 1" = 10'

REVISIONS:
DATE: 03-11-2024

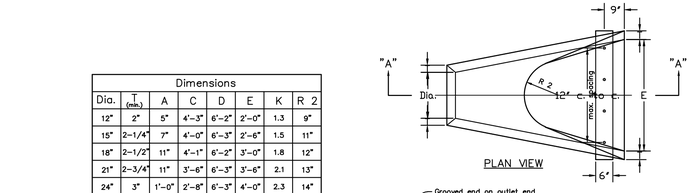
HOLTZ ROAD - IMPROVEMENTS
LOWELL, INDIANA

CROSS SECTIONS

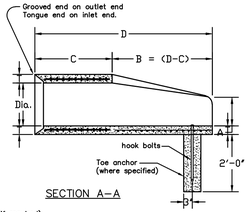
TORRENGA ENGINEERING, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
907 RIDGE ROAD, MUNSTER, INDIANA 46321
Tel. No.: (219) 836-8918 website: www.torrenga.com

SHEET
C-3.5

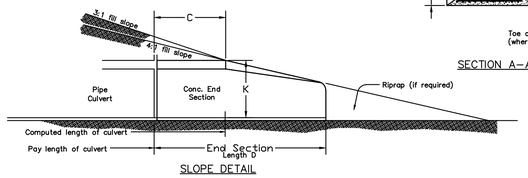
Dimensions							
Dia.	T (min.)	A	C	D	E	K	R 2
12"	2"	5"	4'-3"	6'-2"	2'-0"	1.3	9"
15"	2-1/4"	7"	4'-0"	6'-3"	2'-6"	1.5	11"
18"	2-1/2"	11"	4'-1"	6'-2"	3'-0"	1.8	12"
21"	2-3/4"	11"	3'-6"	6'-3"	3'-6"	2.1	13"
24"	3"	1'-0"	2'-8"	6'-3"	4'-0"	2.3	14"
27"	3-1/4"	1'-1"	2'-5"	6'-3"	4'-6"	2.6	14-1/2"
30"	3-1/2"	1'-2"	1'-10"	6'-3"	5'-0"	2.9	15"
33"	3-3/4"	1'-3"	3'-6"	8'-3"	5'-6"	3.1	17-1/2"
36"	4"	1'-5"	3'-1"	8'-3"	6'-0"	3.4	20"



PLAN VIEW

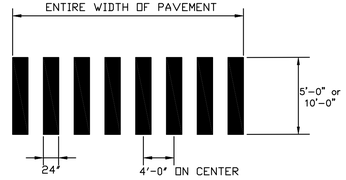


SECTION A-A



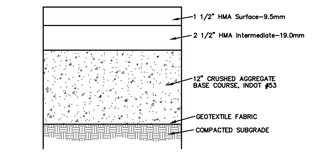
SLOPE DETAIL

PRECAST CONCRETE END SECTION
NOT TO SCALE



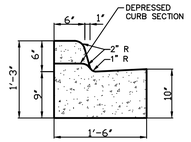
NOTE:
1. ALL REGULATOARY SIGNS SHALL BE HIGH INTENSITY AND IN ACCORDANCE WITH THE INDIANA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, MOST RECENT EDITION.
2. ALL PAVEMENT MARKINGS SHALL BE WHITE THERMOPLASTIC AND SPAN ACROSS APPROACH LANES.

CONTINENTAL CROSS WALK DETAIL
NOT TO SCALE

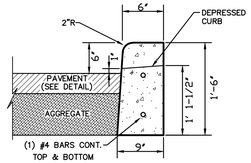


NOTES:
1. WHERE FILL IS REQUIRED, SUBGRADE SHALL BE COMPACTED TO 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D698 METHOD OF TESTING.

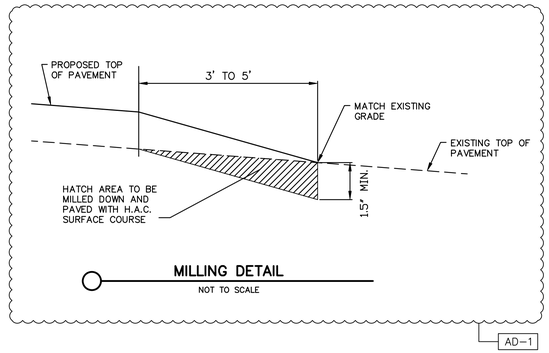
TYPICAL PAVEMENT X-SECTION
NOT TO SCALE



COMBINED CONCRETE HIGH BACK CURB AND GUTTER
NOT TO SCALE

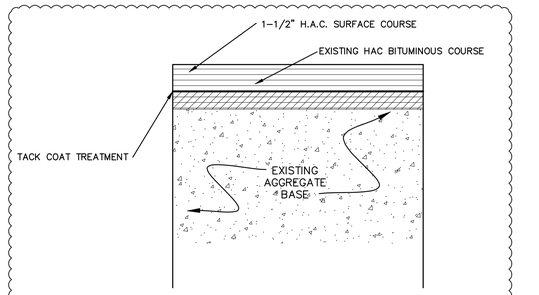


BARRIER CURB DETAIL
NOT TO SCALE



MILLING DETAIL
NOT TO SCALE

AD-1



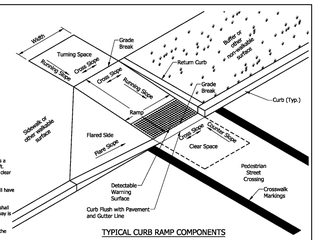
TYPICAL PAVEMENT RESURFACING
NOT TO SCALE

AD-1

INDEX	
SHEET NO.	SUBJECT
1	Curb Ramp Drawing Index and General Notes
2-3	Perpendicular Curb Ramp Typical Placement
4	Perpendicular Curb Ramp Component Details
5	One-Way Directional Perpendicular Curb Ramp Typical Placement
6	One-Way Directional Perpendicular Curb Ramp Component Details
7	Parallel Curb Ramps Typical Placement
8	Parallel Curb Ramp Component Details
9	Blended Transition Curb Ramp, Depressed Curb Ramp and Diagonal Curb Ramp Typical Placement
10	Blended Transition Curb Ramp Component Details
11	Median Cut Through and Median Perpendicular Curb Ramp Typical Placement
12-13	Detectable Warning Surface Placement and Configuration
14	Detectable Warning Surface Details

GENERAL NOTES:

1. All slopes are absolute rather than relative to the sidewalk or roadway grade. Slopes at least 0.50% less than the maximum are preferred.
2. Ramp or Blended Transition. A ramp or blended transition shall be used to lower or raise the sidewalk to connect with the street or highway.
3. Turning Space. A turning space shall be provided at the top of a perpendicular ramp, bottom of a parallel ramp, or where the pedestrian travel requires a change in direction. A common turning space may be shared by adjacent ramps. The turning space shall have a minimum clear dimension of 4 ft x 4 ft. Where the turning space is constrained at the back of the sidewalk by a curb, retaining wall, building, or feature over 2 inches in height, the minimum clear dimension shall be 4 ft x 5 ft, with the 5 ft dimension in the direction of the ramp running slope.
4. Flared Side. A flared side shall be used adjacent to a walkable surface. A flared side may be used adjacent to a non-walkable surface. A flared side shall have a maximum slope of 10.00% measured parallel to the back of the curb.
5. Return Curb. A return curb is placed perpendicular to the roadway curb. A return curb may be used adjacent to a non-walkable surface. A return curb shall not be used adjacent to a walkable surface. The return curb may be omitted where the non-walkable surface is flared and the curb adjacent the roadway is tapered to meet the flush curb at the bottom of the ramp.
6. Clear Space. A clear space shall be provided beyond the bottom grade break of a curb ramp wholly contained within the crosswalk and wholly outside the parallel vehicular travel path. The clear space shall have a minimum clear dimension of 4 ft x 4 ft.
7. Detectable Warning Surface. A detectable warning surface shall consist of truncated domes and be placed at each street, highway, or railroad crossing. The detectable warning surface shall extend a minimum of 2 ft in the direction of pedestrian travel and be placed the entire width of a ramp, blended transition, or turning space.
8. Running Slope. The running slope of a ramp, blended transition, or turning space shall be measured parallel to the direction of pedestrian travel.
   a. A running slope of 2.00% or less is considered level.
   b. A ramp shall have a maximum running slope of 8.33% but shall not require a ramp length to exceed 15 ft.
   c. A blended transition shall have a maximum running slope of 5.00%.
   d. A turning space shall have a maximum running slope of 2.00%.
9. Width. Unless otherwise noted, minimum width of a ramp, blended transition, or turning space, excluding flared sides or return curb, shall be 4 ft.
10. Grade Break. A grade break at the top and bottom of a ramp, blended transition, or turning space shall be perpendicular to the running slope. Grade breaks shall not be within the ramp, blended transition, turning space, or detectable warning surface. Grade breaks shall be flush. Vertical discontinuities shall not be greater than 1/2 in. Where a discontinuity is greater than 1/4 in. the surface shall be beveled with a slope not steeper than 1V:2H.
11. Cross Slope Exceptions. The cross slope of a ramp, blended transition, or turning space shall be measured perpendicular to the direction of pedestrian travel.
    a. The maximum cross slope at a pedestrian street crossing without yield or stop control shall be 5.00%.
    b. The maximum cross slope at a pedestrian street crossing with yield or stop control shall be 2.00%.
    c. The maximum cross slope at a midblock crossing shall be the established grade of the adjacent roadway.
12. Counter Slope. A counter slope is the cross slope of the gutter or street adjacent the running slope of the ramp, blended transition, or turning space. See Standard Drawing E 804-SWCR-01 for counter slope details.
13. Objects such as a utility cover, wash frame, and grating shall be placed outside the curb ramp.
14. Curb ramps shall be placed within the marked crosswalk area.
15. Drainage inlets should be located uphill from a curb ramp to prevent ponding in the path of pedestrian travel.



TYPICAL CURB RAMP COMPONENTS

INDIANA DEPARTMENT OF TRANSPORTATION

CURB RAMP DRAWING INDEX AND GENERAL NOTES

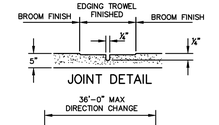
SEPTEMBER 2018

STANDARD DRAWING NO. E 604-SWCR-01

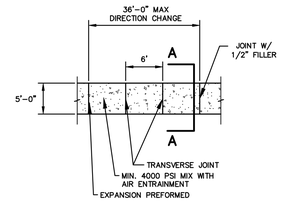
DAVID H. BOROFF REGISTERED No. 10200124 STATE OF INDIANA PROFESSIONAL ENGINEER

/s/ Elizabeth W. Phillips 03/20/18
DESIGN STANDARDS ENGINEER DATE

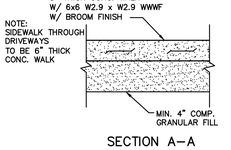
/s/ John Lecklie 04/23/18
CHIEF ENGINEER DATE



JOINT DETAIL

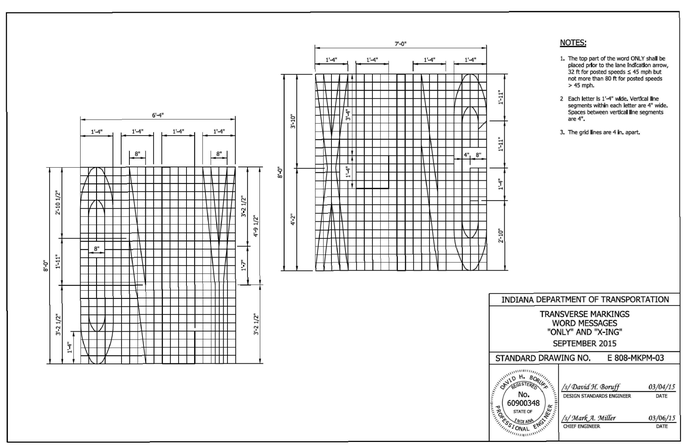


SIDEWALK PLAN



SECTION A-A

TYPICAL SIDEWALK DETAIL
NOT TO SCALE



NOTES:

1. The top part of the word ONLY shall be placed prior to the lane indication arrow, 32 ft for posted speeds ≤ 45 mph but not more than 80 ft for posted speeds > 45 mph.
2. Each letter is 1'-4" wide. Vertical line segments within each letter are 4" wide. Spaces between vertical line segments are 4".
3. The grid lines are 4 ft. apart.

INDIANA DEPARTMENT OF TRANSPORTATION

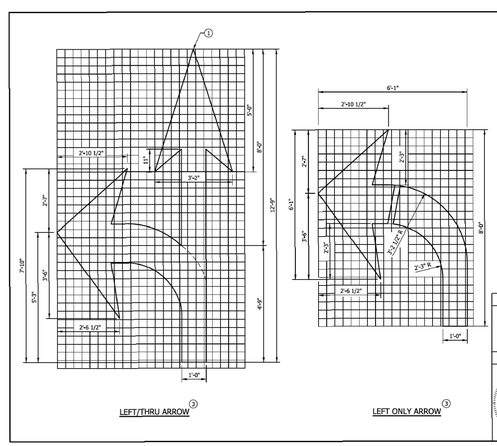
TRANSVERSE MARKINGS
WORD MESSAGES
"ONLY" AND "X-ING"
SEPTEMBER 2015

STANDARD DRAWING NO. E 808-MKPM-03

DAVID H. BOROFF REGISTERED No. 60900348 STATE OF INDIANA PROFESSIONAL ENGINEER

/s/ David H. Boroff 03/04/15
DESIGN STANDARDS ENGINEER DATE

/s/ Mark R. Miller 03/06/15
CHIEF ENGINEER DATE



LEFT/THRU ARROW ③

LEFT ONLY ARROW ③

NOTES:

① The tip of the lane indication arrow closest to the stop line shall be 20 ft in advance of the nearest edge of the stop line.

2. The grid lines are 4 ft. apart.

③ Reverse the dimensions of the left arrow for a right/thru or right only arrow.

INDIANA DEPARTMENT OF TRANSPORTATION

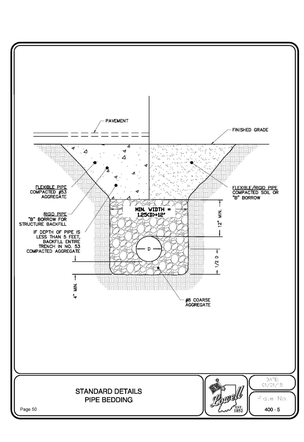
TRANSVERSE MARKINGS
TURN ARROWS
SEPTEMBER 2015

STANDARD DRAWING NO. E 808-MKPM-02

DAVID H. BOROFF REGISTERED No. 60900348 STATE OF INDIANA PROFESSIONAL ENGINEER

/s/ David H. Boroff 03/04/15
DESIGN STANDARDS ENGINEER DATE

/s/ Mark R. Miller 03/06/15
CHIEF ENGINEER DATE



STANDARD DETAILS
PIPE BEDDING

Page 60

DONALD C. TORRENGA REGISTERED No. 19868 STATE OF INDIANA PROFESSIONAL ENGINEER

Donald C. Torrenga

TORRENGA ENGINEERING, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
907 RIDGE ROAD, MUNSTER, INDIANA 46321
Tel. No.: (219) 836-8918
website: www.torrenga.com

HOLTZ ROAD – IMPROVEMENTS
LOWELL, INDIANA

DETAILS & SPECIFICATIONS

03-28-2024 AD-1
REVISIONS:
DATE: 03-11-2024

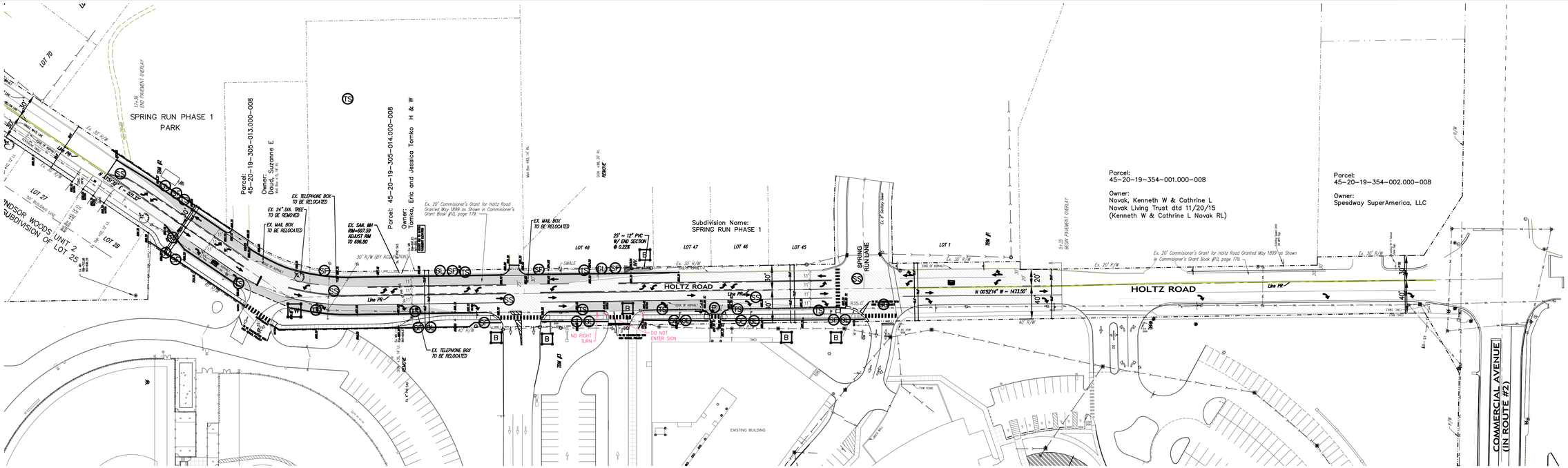
CLIENT:
Tri-Creek School Corporation
19290 Cline Avenue
Lowell, Indiana 46356

JOB NO: 2023-5056

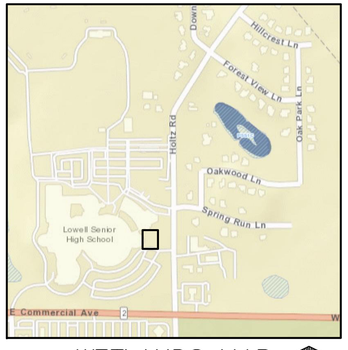
SCALE: NTS

SHEET
C-4.0

FILE NO: Z:\2023-5013 Lowell High School - Lowell\dwg\Holtz Road Details.dwg 12/8/2023 11:47:58 AM CST



VICINITY MAP
NOT TO SCALE
NORTH



WETLANDS MAP
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NORTH

SOIL MAP
NOT TO SCALE
NORTH

Soil Type Legend
- BIA – Blount silt loam, Lake Michigan Lobe, 0 to 2 percent slopes
- El – Elliott silt loam, 0 to 2 percent slopes
- OzlC3 – Ozaukee silty clay loam, 6 to 12 percent slopes, severely eroded
- OzaB – Ozaukee silt loam, 2 to 6 percent slopes
- Pc – Pewamo silty clay loam

GENERAL NOTES:

1. THIS PROPERTY IS LOCATED IN FLOOD ZONE(S) "A" & "X (UNSHADED)" AS DETERMINED BY USING SCALE MEASUREMENT FOR LOCATION UPON THE APPLICABLE FLOOD INSURANCE RATE MAP FOR THE TOWN OF LOWELL AND UNINCORPORATED AREAS , LAKE COUNTY), INDIANA AS SHOWN IN COMMUNITY PANEL(S) 18089C0342E EFFECTIVE JANUARY 18, 2012 , TRACTS OF LAND LOCATED IN FLOOD ZONE "A" ARE IN A SPECIAL FLOOD HAZARD AREA SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD. THE 1% ANNUAL CHANCE FLOOD (100 YEAR FLOOD), ALSO KNOWN AS THE BASE FLOOD, IS THE FLOOD THAT HAS A 1% CHANCE OF BEING EQUALED OR EXCEEDED IN ANY GIVE YEAR. THIS SPECIAL FLOOD HAZARD AREA IS THE AREA SUBJECT TO FLOODING BY THE 1% ANNUAL CHANCE FLOOD. THE BASE FLOOD ELEVATION IS THE WATER-SURFACE ELEVATION OF THE 1% ANNUAL CHANCE FLOOD. IN A FLOOD ZONE "A", THE BASE FLOOD ELEVATIONS HAVE NOT BEEN DETERMINED. TRACTS OF LAND LOCATED IN FLOOD ZONE X (UNSHADED) ARE AREAS DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOOD HAZARD.
2. HYDROLOGIC UNIT CODE (HUC) – 07120001130040 SPRING RUN
3. AN IDEM CONSTRUCTION STORMWATER GENERAL PERMIT (CSGP) IS REQUIRED.
4. AT PRESENT THE SITE IS AN EXISTING SCHOOL WITH SURROUNDING PARKING AREAS, PONDS AND SPORTS FIELDS.
5. THERE IS PRESENCE OF HYDRIC SOILS ON THIS PROPERTY, (PC) PEWAMO SILTY CLAY LOAM.
6. THERE ARE NO EXISTING WETLAND AREAS ON THIS PROPERTY BUT DO EXIST ON ADJACENT PROPERTY AS CLASSIFIED BY THE U.S. FISH AND WILDLIFE SERVICE, NATIONAL WETLANDS INVENTORY, AND THE UNITED STATES DEPARTMENT OF THE INTERIOR. THERE ARE NO LAKES OR WATER COURSES BUT A DETENTION POND DOES EXIST ON THIS PROPERTY. SPRING RUN IS THE WATER COURSE WHICH THE STORMWATER FROM THE REST OF THE PROPOSED SITE WILL ULTIMATELY DISCHARGE INTO; A TRIBUTARY OF WHICH IS LOCATED APPROXIMATELY 2,000 FT EAST OF THE PROJECT SITE.
7. POTENTIAL SOURCE OF STORM WATER DISCHARGE ENTERING THE GROUNDWATER FROM THIS DEVELOPMENT WILL BE THROUGH NATURAL GROUND ABSORPTION ONLY. THERE ARE NO ABANDONED WELLS OR SINKHOLES ON THE PROPERTY.
8. THERE ARE NO SENSITIVE AREAS ASSOCIATED WITH THIS PROPERTY.
9. THERE ARE NO REGULATED DRAINS WITHIN THIS PROPERTY, OR ON ADJACENT PROPERTIES. THERE IS NO RECORD OR KNOWLEDGE OF EXISTING FARM DRAINS OR FIELD TILE, INLETS AND OUTFALLS LOCATED WITHIN THE EXISTING PROJECT LIMITS.
10. SOIL STOCKPILES, BORROW AND DISPOSAL AREAS ARE LOCATED WITHIN THE PROJECT SITE. SOIL STOCKPILES SHALL BE SURROUNDED WITH SILT FENCING AT ALL TIMES TO PREVENT EXCESSIVE EROSION, AND IF LEFT UNDISTURBED FOR A PERIOD OF MORE THAN 7 DAYS, IT SHALL BE TEMPORARY SEEDED WITHIN 14 DAYS. UPON SITE COMPLETION THE TOPSOIL STOCKPILE SHALL BE RESPREAD, GRADED, AND PERMANENTLY SEEDED. SOIL STOCKPILES SHALL NOT BE LEFT ON THE SITE FOR GREATER THAN 6 MONTHS AFTER CONSTRUCTION IS COMPLETED. NO SOIL FROM THE STOCKPILES SHALL BE REMOVED FROM THE SITE. ALL EXTRA STOCKPILE MATERIAL SHALL BE RESPREAD IN AREAS DESIGNATED BY THE CONSTRUCTION MANAGER.
11. AREAS WHERE THE PROPOSED ROAD WIDENING AND SIDEWALKS AS WELL AS AREAS WHERE PROPOSED UTILITIES ARE LOCATED WILL BE DISTURBED DURING CONSTRUCTION. IN ALL OTHER AREAS, EXISTING VEGETATIVE COVER WILL BE PRESERVED.
12. FUEL STORAGE AREA IF REQUIRED SHALL BE WITHIN THE CONSTRUCTION STAGING AREA, FUEL SHALL BE STORED IN APPROVED MOBILE REFUELING TANK LOCATED AWAY FROM DRAINAGE STRUCTURES AND CHANNELS. FIRE EXTINGUISHERS SHALL BE LOCATED NEAR FUEL STORAGE AREA AND BE OF SUITABLE TYPE, POSTED, AND BE MAINTAINED IN GOOD CONDITION.
13. TEMPORARY SEED ALL AREAS OF BARE SOIL (WITH THE ADDITION OF A BLANKET WHERE SLOPES ARE 4:1 OR GREATER) THAT WILL REMAIN UNDISTURBED FOR A PERIOD OF MORE THAN 7 DAYS, WITHIN 14 DAYS. SEEDING: OPTIMUM SEEDING DATES ARE MARCH 1 – MAY 10 AND AUGUST 10 – SEPTEMBER 30. SEEDING DATES BETWEEN MAY 10 AND AUGUST 10, MAY NEED TO BE IRRIGATED. FOR SEEDING RECOMMENDATIONS SEE PRACTICE 3.12, INDIANA STORM WATER QUALITY MANUAL.
14. ALL SOIL STOCKPILES, AREAS THAT ARE DISTURBED DURING CONSTRUCTION, AND DRAINAGE SWALES WHICH ARE SCHEDULED OR LIKELY TO BE LEFT INACTIVE FOR SEVEN (7) CALENDAR DAYS OR MORE MUST BE TEMPORARILY OR PERMANENTLY SEEDED WITH MEASURES APPROPRIATE FOR THE SEASON WITHIN FOURTEEN (14) DAYS.
15. SITE ELEVATIONS ARE BASED ON NAVD 88, AND HORIZONTAL DATUM IS BASED ON INDIANA STATE PLANE COORDINATES NAD 83.

NOTES:
1. FOR POST-CONSTRUCTION STORM WATER POLLUTION PREVENTION, TEMPORARY SEEDING LOCATIONS SHALL BE PERMANANTLY SEEDED.

SWPPP LEGEND:

- B – BASKET INSERT INLET PROTECTION
- GL – GRADE LIMITS
- SF – SILT FENCE
- CW – CONCRETE WASH OUT AREA
- TS – TEMPORARY SEEDING
- SS – STREET SWEEPING
- XXX.XX – GRADES (PROPOSED)
- RC – ROCK CHUTE
- P – POSTING CSGP NOI & NOS LETTERS AND LOCAL SWPPP PERMIT
- EROSION CONTROL BLANKET (NORTH AMERICAN GREEN OR APPROVED EQUAL) TO BE INSTALLED ON ALL DISTURBED GRASS AREAS

DONALD C. TORRENGA
REGISTERED
No. 19868
STATE OF INDIANA
PROFESSIONAL ENGINEER

NORTH
GRAPHIC SCALE
60 0 30 60 120 240
(IN FEET)
1 inch = 60 ft.

CLIENT:
Tri-Creek School Corporation
19290 Cline Avenue
Lowell, Indiana 46356

JOB NO: 2023-5056
SCALE: 1" = 60'

REVISIONS:
DATE: 12-xx-2023

HOLTZ ROAD – IMPROVEMENTS
LOWELL, INDIANA

STORM WATER POLLUTION PREVENTION PLAN

TORRENGA ENGINEERING, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
907 RIDGE ROAD, MUNSTER, INDIANA 46321
Tel. No.: (219) 836-8918 website: www.torrenga.com

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CONCRETE WASHOUT

Purpose: To reduce the discharge of pollutants associated with concrete waste through consolidation of solids and retention of liquids.

Requirements:

1.) Locate concrete washout systems at least 50 feet from any creeks, wetlands, ditches, karst features, or storm drains/manmade conveyance systems.

2.) Locate concrete washout systems in relatively flat areas with established vegetative cover and do not receive runoff from adjacent land areas.

3.) Locate in areas that provide easy access for concrete trucks and other construction equipment.

4.) Locate away from other construction traffic to reduce the potential for damage to the system.

5.) Minimum of ten millimeter polyethylene sheeting that is free of holes, tears, and other defects. The sheeting selected should be of an appropriate size to fit the washout system without seams or overlap of the lining.

6.) Signage.

7.) Orange safety fencing or equivalent.

8.) Straw bales, sandbags (bags should be ultraviolet-stabilized geotextile fabric), soil material, or other appropriate materials that can be used to construct a containment system (above grade systems).

Installation:

1.) Dependent upon the type of system, either excavate the pit or install the containment system.

2.) A base shall be constructed and prepared that is free of rocks and other debris that may cause tears or punctures in the polyethylene lining.

3.) Install the polyethylene lining. For excavated systems, the lining should extend over the entire excavation. The lining for bermed systems should be installed over the pooling area with enough material to extend the lining over the berm or containment system. The lining should be secured with pins, staples, or other fasteners.

4.) Place flags, safety fencing, or equivalent to provide a barrier to construction equipment and other traffic.

5.) Place a non-collapsing, non-water holding cover over the washout facility prior to a predicted rainfall event to prevent accumulation of water and possible overflow of the system (optional).

6.) Install signage that identifies concrete washout areas.

7.) Post signs directing contractors and suppliers to designated locations.

Maintenance:

1.) Inspect daily and after each storm event.

2.) Inspect the integrity of the overall structure including, where applicable, the containment system.

3.) Inspect the system for leaks, spills, and tracking of soil by equipment.

4.) Inspect the polyethylene lining for failure, including tears and punctures.

5.) Once concrete wastes harden, remove and dispose of the material.

6.) Excess concrete should be removed when the washout system reaches 50 percent of the design capacity. Use of the system should be discontinued until appropriate measures can be initiated to clean the structure. Prefabricated systems should also utilize this criterion, unless the manufacturer has alternate specifications.

7.) Upon removal of the solids, inspect the structure. Repair the structure as needed or construct a new system.

8.) Dispose of all concrete in a legal manner. Reuse the material on site, recycle, or haul the material to an approved construction/demolition landfill site. Recycling of material is encouraged. The waste material can be used for multiple applications including but not limited to roadbeds and building. The availability for recycling should be checked locally.

9.) The plastic liner should be replaced after every cleaning; the removal of material will usually damage the lining.

10.) The concrete washout system should be repaired or enlarged as necessary to maintain capacity for concrete waste.

11.) Concrete washout systems are designed to promote evaporation. However, if the liquids do not evaporate and the system is near capacity it may be necessary to vacuum or remove the liquids and dispose of them in an acceptable method. Disposal may be allowed at the local sanitary sewer authority provided there is a National Pollutant Discharge Elimination System permits allow for acceptance of this material. Another option would be to utilize a secondary containment system or basin for further dewatering.

12.) Prefabricated units are often pumped and the company supplying the unit provides this service.

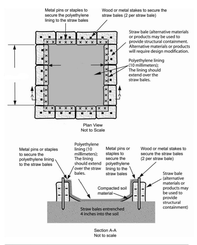
13.) Inspect construction activities on a regular basis to ensure suppliers, contractors, and others are utilizing designated washout areas. If concrete waste is being disposed of improperly, identify the violators and take appropriate action.

14.) When concrete washout systems are no longer required, the concrete washout systems shall be closed. Dispose of all hardened concrete and other materials used to construct the system.

15.) Holes, depressions and other land disturbances associated with the system should be backfilled, graded, and stabilized.

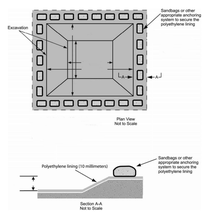
CONCRETE WASHOUT

Concrete Washout (Above Grade System) Worksheet



CONCRETE WASHOUT

Concrete Washout (Below Grade System) Worksheet



SILT FENCE

Purpose: To retain sediment from small sloping disturbed areas by reducing the velocity of sheet flow.

Requirements:

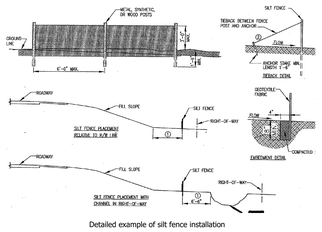
Trench:	8" minimum depth, flat bottom or v-shaped, filled with compacted soil or gravel to bury lower portion of support wire and/or fence fabric.
Support posts:	2" x 2" hardwood posts set at lease 1 foot deep.
Spacing of Posts:	8-foot maximum if fence supported by wire, otherwise 6 foot for extra strength fabric without wire backing.
Fence height:	A 3 feet minimum or high enough so depth of impounded water does not exceed 1.5 feet at any point along fence line.
Support wire : (optional)	14 gauge, 6" mesh wire fence. (needed if using standard-strength fabric
Fence Fabric:	Woven or non-woven Geotextile fabric with specified filtering efficiency and tensile strength and containing UV inhibitors and stabilizers to ensure 6 months minimum life at temperatures 0-120 degrees F.

Installation:

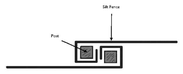
1. Along the entire intended fence line, maintain contour as much as possible, dig an 8" deep flat bottom or v-shaped trench.
2. On the downslope side of the trench, drive the post at least 1 foot into the ground. (Note: If the fence has pre-attached posts or stakes, drive them deep enough so the fabric is satisfactorily in the trench per step 6)
3. Fasten support wire fence to the upslope side of the posts, extending it 8" into trench. (use only if required by manufacturer)
4. Run a continuous length of Geotextile fabric along upslope side of posts.
5. If a joint is necessary, nail the overlap to the nearest post with a wood lath.
6. Place the bottom 1' of fabric in the 8" deep trench, extending the remaining 4" of fabric toward the upslope side.
7. Backfill the trench with compacted earth.

Maintenance:

1. Inspect silt fence periodically and after each storm event.
2. If fence fabric tears, starts to decompose, or becomes ineffective, replace the affected portion.
3. Remove deposited sediment when it reaches half the height of the fence at its lowest point or is causing the fabric to bulge.
4. Take care to avoid undermining the fence during clean out.
5. After watershed has been stabilized, remove fence and sediment deposits, bring the disturbed area to grade and stabilize.



Detailed example of silt fence installation



STREET AND PARKING LOT SWEEPING

Purpose: To reduce the amount of pollutants that get washed into the storm drain and ultimately transported and deposited in waterbodies.

Application:

1. Sweeping at points of egress where sediment is tracked from project site onto public or private streets and roads.

Limitations:

1. Sweeping may be ineffective if soil is wet or heavy accumulation of mud.
2. May require repeat cleanings.

Maintenance:

1. Inspect potential sediment tracking ingress and egress points locations daily, and after rain events.
2. Visible sediment observed outside the construction limits shall be swept and removed daily.
3. Do not use kick brooms or sweeper attachments. These tend to spread the dirt rather than remove it.
4. If not mixed with debris or trash, consider incorporating the removed sediment back into the project.
5. Be careful not to sweep up any unknown substance or any object that may be potentially hazardous.
6. Adjust brooms frequently; maximize efficiency of sweeping operations.
7. After sweeping is finished, properly dispose of sweeper wastes at an approved dumpsite.

TEMPORARY SEEDING

Purpose: To stabilize disturbed areas especially along both sides of the streets and courts after final grading work is completed and where additional work is not scheduled.

Requirements:
Site and seedbed preparation: Graded, and lime and fertilizer applied

Seed Selected:
Selected on the basis of quick germination, growth, and time of year, see Table for temporary seeding recommendations.

Fertilize: According to soil test or use 600 lbs/acre 12-12-12 analysis or equivalent.

Mulch: 1.5 - 2 tons/acre straw. Straw must be dry, unchopped and free of undesirable seeds.

Application:

1. Fertilize and lime as recommended by the soil test.
2. Till the soil to obtain a uniform seedbed, working the fertilizer and lime into the soil 2-4" deep with a disk or rake operated across the slope.
3. Apply seed uniformly with a drill or cultipacker-seeder, or by broadcasting, and cover to a depth as shown on Table for temporary seeding recommendations.
4. If drilling or broadcasting, firm the seedbed with a roller or cultipacker.
5. Mulch all seeded areas. (Note: If seeding is done with a hydroseeder, fertilizer and mulch can be applied with the seed in a slurry mixture.)

Maintenance:

1. Inspect periodically after planting to see that vegetative stands are adequately established; re-seed if necessary.
2. Check for erosion damage after storm events and repair; re-seed and mulch if necessary.

Notes:

1. Vegetative Filter Strip: permanent or temporary, shall be done on all disturbed areas along both sides of the streets and courts to reduce erosion where additional work is not scheduled.
2. Permanent Seeding: or sodding shall be done at the time of final landscaping.

Table 1. Temporary Seeding Specifications

Seed Species[1]	Rate per Acre	Planting Depth	Optimum Dates[2]
Wheat or Rye	150 lbs.	1 to 1½ inches	Sept. 15 – Oct. 30
Spring Oats	100 lbs.	1 inch	March 1 – April 15
Annual Ryegrass	40 lbs.	¼ inch	March 1 – May 1 Aug. 1 – Sept. 1
German Millet	40 lbs.	1 to 2 inches	May 1 – June 1
Sudangrass	35 lbs.	1 to 2 inches	May 1 – July 30
Buckwheat	60 lbs.	1 to 2 inches	April 15 – June 1
Corn (broadcast)	300 lbs.	1 to 2 inches	May 11 – Aug. 10
Sorghum	35 lbs.	1 to 2 inches	May 1 – July 15

[1] Perennial species may be used as a temporary cover, especially if the area to be seeded will remain idle for more than one year (see **Permanent Seeding** on page 35).

[2] Seeding done outside the optimum seeding dates increases the chances of seeding failure. Dates may be extended or shortened based on the location of the project site within the state.

ROCK CHUTE

Purpose: To protect slopes, stream banks and channels, which are subject to erosion. Where run off velocity is great, at the outlet pipe of a detention basin, channel or culvert.

Requirements:
Rock: Hard angular, weather-resistant and well graded stone, the largest pieces should not exceed two times the specified stone diameter.

Thickness: 12" minimum or two times the specified stone diameter, which ever is greater.

Filter: Under permanent riprap install geotextile fabric for stabilization and filtration

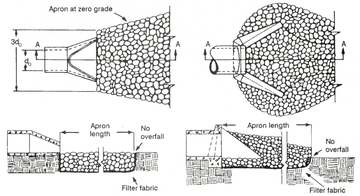
Installation:
Subgrade Replacement:
1. Remove brush, trees, stumps, and other debris.
2. Excavate only deep enough for both filter and riprap.

Filter Placement:
1. Place geotextile fabric on a smoothed foundation, overlap the edges at least 12 inches and secure with anchor pins spaced every 3 feet along the overlap.
2. If fabric is damaged, remove the riprap and repair damaged area by 12 inches.

RipRap Replacement:
1. Immediately after installing the filter, add the riprap to full thickness in one operation to the design elevation, and extend riprap to the top of the bank.
2. Place smaller rock in voids to form a dense, uniform, well-graded mass.
3. Blend the riprap smoothly to the surrounding grade.
4. Stabilize all disturbed areas immediately following installation.

Maintenance:
1. Inspect periodically for displaced rock material, slumping, and erosion at edges, especially down stream or down slope.

Note:
1. At owner's discretion, oulet protection & grade stabilization Scour Stop TM may be substituted for this practice.



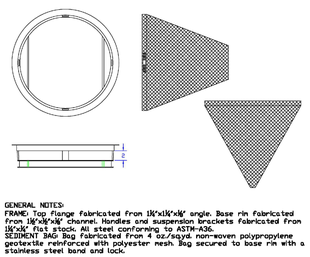
BASKET INLET / CATCH BASIN PROTECTION

Purpose: To prevent excessive sediment from entering storm sewers at inlet/catch basin, allowing full use of the storm drain system during the construction period.

Requirements: Steel Frame with top width-length dimensions such that the basket fits into the inlet and/or catch basin (circular and/or rectangular), and a replaceable Geotextile fabric bag attached with a steel band locking cap that is suspended from the frame, **Catch -all Inlet Protector Hancor Flo-Gard bt Nyloplast** or approved equal.

Installation:
1. Install protection to existing and newly installed inlet/catch basin in a new development before land disturbing activities begin in a stabilized area.
2. Remove the grate, and place the basket assembly under the grate on the lip of the structure frame.
3. Replace the inlet/catch basin grate.

Maintenance:
1. Inspect weekly during construction and after each storm event of a minimum of 1/2 inch rainfall, and remove built-up sediment.
2. Replace bag every six (6) months.
3. Replace the Geotextile fabric bag if there is a hole and/or won't pass water.
4. Replace the Geotextile fabric bag after any oil, gasoline or solvent spill.



GENERAL NOTES:
FRAME: Top flange fabricated from 1½"x1½"x⅛" angle. Base rim fabricated from 1⅛"-⅛"x⅝"x⅛" channel. Handles and suspension brackets fabricated from 1½"x⅛" flat stock. All steel conforming to ASTM-A36.
SEDIMENT BAG: Bag fabricated from 4 oz./sqyd. non-woven polypropylene geotextile reinforced with polyester mesh. Bag secured to base rim with a stainless steel band and lock.

TYPICAL INLET/CATCH BASIN PROTECTION
INSERT DETAIL

DUST CONTROL

Purpose:
To reduce wind-borne soil particles (dust) that may be transported and deposited in waterbodies, create a health hazard, and/or a visibility hazard.

Requirements:
1. Dust control measures may be applied at any construction site, but should always be utilized for sites with dry, unvegetated soils that are exposed to wind or vehicle traffic that can potentially result in the generation of dust.
2. Where practical, locate haul roads and stockpiles away from existing residential housing, businesses, and public areas.
3. Limit construction equipment on haul roads to the extent practical. Construction equipment should maintain low speed of 15 miles per hour or less.
4. Trucks leaving a project site should be covered, especially where conditions may result in blowing of haul material.
5. Minimize areas of disturbed, unvegetated soil exposed to traffic and wind.
6. Water quality impacts should always be considered when selecting a dust control treatment.

Application:
1. Temporary Methods
   A. Watering/Irrigation
      Typically used for haul roads and heavy traffic areas.
      Used as an emergency treatment measure.

   B. Dust suppressants that are commercially available. Some products may be toxic to the environment. The level of toxicity and proximity to waterbodies and other unique resource areas should be considered when selecting a product. Products should be strictly applied according to the standards and specifications of the manufacturer and in accordance with applicable local, state, and federal regulations.

   Chlorides
   - Used for unpaved construction haul roads.
   - Applied as a liquid solution or dry granules/flakes.
   - Application can inhibit growth.
   - Runoff from treated areas can pollute waterbodies.

   Resins
   - Applied to haul roads, soil stockpiles, unvegetated soils, or used as a tackifier.
   - Water sheds off soils treated with these products.
   - Low environmental impact after application.
   - Avoid introducing resins into waterbodies during application.

   Polymer Products
   - Used on soil stockpiles, unvegetated soils.
   - May also be applicable to haul roads.
   - Apply with truck or hydroseeding machine.
   - Use restricted to anionic polymer mixtures and shall have less than or equal to .05 percent free acrylamide monomer by weight as established by the U.S. Food and Drug Administration and the U.S. Environmental Protection Agency.

   Lignisulfonates
   - Used for haul roads.
   - Water soluble and could lose bonding capability in heavy rain.
   - Environmentally friendly.

   Tillage
   - Large open disturbed areas.
   - Used as an emergency treatment measure.
   - Relatively flat areas of less than two percent.
   - Chisel plows with shanks spaced 12 to 18 inches apart, straight-toothed harrows, or similar tillage equipment.
   - Best if implemented before soil begins to blow.

   Mulch
   - Disturbed areas.
   - Effective, temporary measure.

   Temporary Vegetative Cover
   - Disturbed areas.
   - Effective, temporary measure.

   Physical Barriers
   - Emergency treatment measure.
   - Solid board fences, snow fences, burlap fences, crate walls, bales of hay, etc.
   - Used to control air currents and soil migration.

   Street Sweeping
   - Paved areas.
   - Street sweeper, vacuum truck, or a bucket end loader.

Application:
Prepare site for the application method or product that was selected for dust control.

Maintenance:
1. Inspect daily.
2. Repeat treatments as needed when using temporary dust control methods.
3. Commercial products should be used in accordance with the recommendations of the manufacturer.

SPILL PREVENTION AND RESPONSE

Purpose: Procedures and practices to prevent and control spills in a manner that minimizes or eliminates the discharge of spilled material to the drainage system or watercourses.

Hazardous Waste Products:
- Petroleum Products,
- Asphalt Products,
- Concrete Curing Compounds,
- Pesticides,
- Acids,
- Paints,
- Stains,
- Solvents,
- Wood Preservatives,
- Roofing Tar, or

Other Waste Products:
- Soil stabilizers/binders
- Dust palliatives
- Herbicides
- Growth inhibitors
- Fertilizers
- Deicing/anti-icing chemicals
- Fuels
- Lubricants
- Other petroleum distillates

Any materials deemed a hazardous waste in 40 CFR Parts 110, 117, 261, or 302

Spill Prevention Practices:
The following are management practices used for reduction of spills and other accidental exposure of materials and substances to storm water runoff:

a. The contractors and subcontractors shall refer to the Material Safety Data Sheet (MSDS) for information on the proper storage, use, and clean-up methods for all materials anticipated being on the project site.
b. All required materials for spill clean up and disposal of all onsite materials shall be kept on site in a project trailer with easy access for all users of associated materials.
c. All disposals of spilled materials shall be done in accordance with Federal, State and Local waste disposal regulations. All contractors and subcontractors shall be responsible for any and all spills associated with their work.
d. Prompt cleanup of any spills that may occur of liquid or dry materials.
e. Cleanup of sediments that have been tracked by vehicles or have been transported by wind or storm water about the site or onto nearby roadways.

Response Practices:
In the event that a large spill occurs (that which requires extensive cleanup actions, refer to MSD sheets for information), the following procedures shall be followed to minimize exposure of the material.

a. Immediate action shall be taken to control and contain the spill to prevent it from entering any nearby storm sewer structures or open waters.
b. Notify the Town of Valparaiso Fire Department at 911 for all combustible and flammable materials.
c. Notify: for local contact, the Porter County Emergency Management at Phone: 219-462-8654, and/or Fax: 219-465-3598; the Federal Emergency Spill Hotline at 1-800-424-8802 within 2 hours for spills above the reported allowable quantity, or if the material enters any nearby storm sewer structures or open waters.
d. Notify: for local contact, the Porter County Emergency Management at Phone: 219-462-8654, and/or Fax: 219-465-3598; the Indiana Emergency Response Hotline at 1-888-233-7745.
e. The spill area shall be isolated from all surrounding areas with absorbent pads, booms, and pillows designed for the use of spill containment and absorption.
f. The spill kits that are required to be on site shall be utilized.
g. Emergency Response teams shall be contacted for extensive spills above and beyond the containment by available means.

Waste Disposal Management Practices:
All solid waste associated with the construction and development of this project shall be removed and disposed of properly with in all applicable state and federal laws associated with the waste generated. Developer and/or contractor are to provide on-site dumpsters, rented from a licensed solid waste management company, to ensure waste is collected and disposed of properly. All trash and construction debris from the site will be deposited in a dumpster. No construction waste will be buried onsite. All personnel will be instructed regarding the correct procedure for waste disposal.

a. Select a designated waste collection area onsite.
b. Provide an adequate number of containers with lids or covers throughout the site, and frequent pickups.
c. Provide immediate cleanup of any container spills.
d. Make sure that construction waste is collected, removed, and disposed of only at authorized areas.

DONALD C. TORRENGA REGISTERED No. 19868 STATE OF INDIANA PROFESSIONAL ENGINEER

Donald C. Torrenga

CLIENT: Tri-Creek School Corporation 19290 Cline Avenue Lowell, Indiana 46356 JOB NO: 2023-5056		HOLTZ ROAD – IMPROVEMENTS LOWELL, INDIANA STORM WATER POLLUTION PREVENTION PLAN DETAILS	TORRENGA ENGINEERING, INC. CONSULTING ENGINEERS & LAND SURVEYORS 907 RIDGE ROAD, MUNSTER, INDIANA 46321 Tel. No.: (219) 836-8918 website: www.torrenga.com	SHEET C-5.1
SCALE: NO SCALE	REVISIONS: DATE: 03-11-2024			

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