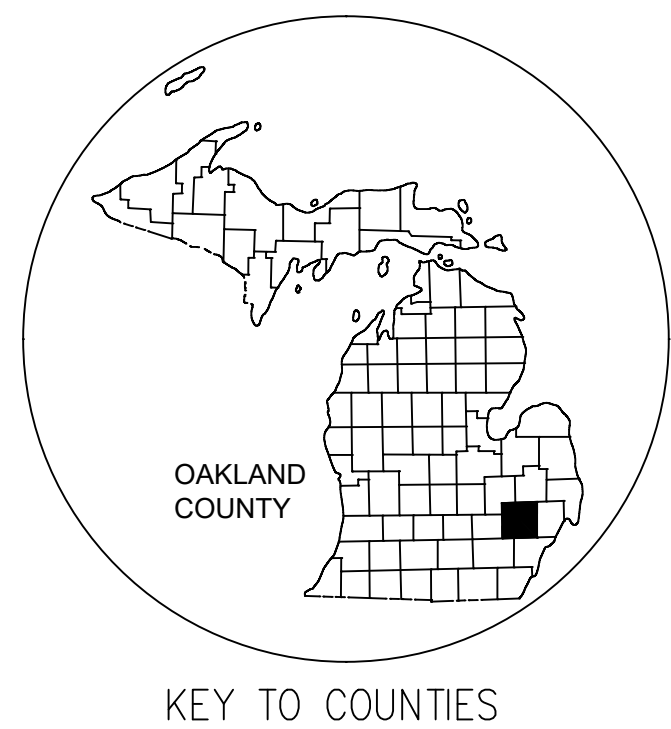


# CHARTER TOWNSHIP OF WHITE LAKE

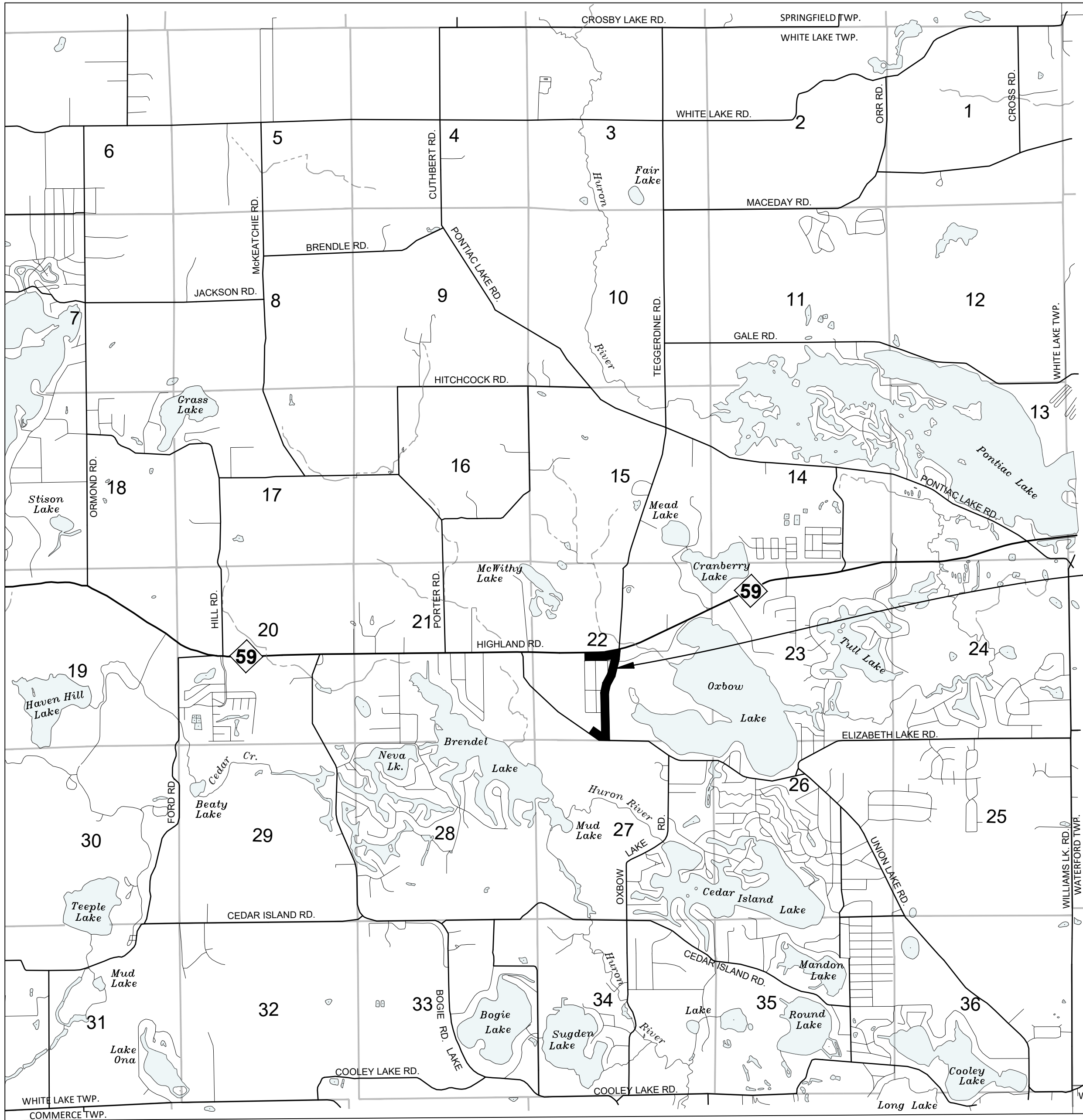
PLANS FOR

## TRIANGLE PATHWAY



KEY TO COUNTIES

| SHEET INDEX  |                                                  |
|--------------|--------------------------------------------------|
| Sheet Number | Sheet Title                                      |
| COVER        | COVER SHEET                                      |
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| V-101        | EXISTING CONDITIONS (HIGHLAND RD)                |
| V-102        | EXISTING CONDITIONS (TEGGERDINE RD)              |
| V-103        | EXISTING CONDITIONS (ELIZABETH LAKE RD)          |
| CD-201       | REMOVAL PLAN (HIGHLAND RD)                       |
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| C-301        | LAYOUT PLAN (HIGHLAND RD)                        |
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| C-401        | PLAN & PROFILE (HIGHLAND ROAD 0+00-10+14)        |
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| C-404        | PLAN & PROFILE (TEGGERDINE ROAD 26+50-32+98)     |
| C-405        | PLAN & PROFILE (ELIZABETH LAKE ROAD)             |
| C-406        | CROSS SECTIONS                                   |
| C-501        | SITE DETAILS                                     |
| C-502        | SITE DETAILS                                     |
| 1 of 1       | WHITE LAKE TOWNSHIP STORM SEWER STANDARD DETAILS |



LOCATION MAP

SCALE = 1" = 2,500'

## WHITE LAKE CHARTER TOWNSHIP BOARD OF TRUSTEES

7525 Highland Road, White Lake, Michigan 48383 (248) 698-3300

RIK KOWALL  
ANTHONY NOBLE  
MIKE ROMAN  
SCOTT RUGGLES  
MICHAEL POWELL  
ANDREA C. VOORHEIS  
LIZ FESSLER SMITH

SUPERVISOR  
CLERK  
TREASURER  
TRUSTEE  
TRUSTEE  
TRUSTEE

PROJECT  
LOCATION

| REQUIRED PERMITS FOR THIS PROJECT: |         |
|------------------------------------|---------|
| MDOT                               |         |
| PERMIT No.:                        | ISSUED: |
| ROAD COMMISSION FOR OAKLAND COUNTY |         |
| PERMIT No.:                        | ISSUED: |
| OCWRC SOIL EROSION                 |         |
| PERMIT No.:                        | ISSUED: |

### GENERAL NOTES

THE CONTRACTOR SHALL CALL "MISS DIG" (1-800-482-7171) THREE WORKING DAYS, EXCEPT SATURDAY, SUNDAY, AND HOLIDAYS PRIOR TO COMMENCEMENT OF ANY WORK.

ALL UTILITIES SHOWN ARE APPROXIMATE LOCATIONS DERIVED FROM ACTUAL MEASUREMENTS AND AVAILABLE RECORDS. THEY SHOULD NOT BE INTERPRETED TO BE THE EXACT LOCATION NOR SHOULD IT BE ASSUMED THAT THEY ARE THE ONLY UTILITIES IN THE AREA.

THE IMPROVEMENTS COVERED BY THESE PLANS SHALL BE DONE IN ACCORDANCE WITH THE CHARTER TOWNSHIP OF WHITE LAKE CODE OF ORDINANCES.



INNOVATIVE IDEAS  
EXCEPTIONAL DESIGN  
UNMATCHED CLIENT SERVICE

PROJECT DESCRIPTION:  
PROPOSED PATHWAY & SIDEWALK

PREPARED UNDER THE SUPERVISION OF

YADONG DONG, P.E. 6201068280  
REGISTERED PROFESSIONAL ENGINEER REGISTRATION NO.

DLZ  
ORGANIZATION



## SOIL EROSION AND SEDIMENTATION CONTROL NOTES AND MAINTENANCE NOTES

- This Project shall be constructed in compliance with Part 91 of Act 451 of 1994 as amended, the Soil Erosion and Sedimentation Control Act and the Oakland County Water Resource Soil Erosion and Sedimentation Control requirements
- All erosion and sedimentation control work shall conform to the standards and specifications of the Oakland County Water Resource Commission.
- Erosion and any sedimentations from work on this site shall be contained on the site and not allowed to collect on any off site areas or in Waterways. Waterways include both natural and man made open ditches, streams, storm drains, lakes and ponds.
- Staging of the work will be done by the Contractor as directed in these plans and as required to ensure progressive stabilization and maintenance of disturbed earth change.
- The Contractor shall be responsible for installation and maintenance of soil erosion and sedimentation control devices.
- The Contractor shall implement and maintain the soil erosion control measures as shown on the plans before and at all times during construction of this project. Any modifications or additions to soil erosion control measures due to construction or changed conditions shall be complied with as required or directed by the Office of the Oakland County Water Resource Commission.
- If any of SESC measures on the site are deemed inadequate or ineffective, the Oakland County Water Resource Commission has the right to require additional SESC measures at the expense of the Contractor.
- The Soil Erosion and Sedimentation Control Measures shall be maintained weekly and after every storm event by the Contractor.
- Install Inlet Filter on all permanent catch basins per detail.

A

B

C

Inlet filters shall be inspected weekly under normal conditions, within 24 hours of a rainfall and daily during a prolonged rain event.

Buildup of sediment and debris shall be removed promptly.

If fabric decomposes or becomes ineffective prior to the end of expected usable life and the barrier is still required, the silt fence shall be replaced promptly.
- All stockpiled soils shall be maintained in such a way as to prevent erosion from leaving the site. If the stockpile will be on site for more than 30 days, then the stockpile must be seeded. Silt fence must be installed around the perimeter of the stockpile. Immediately after seeding, mulch all seeded areas with unweathered small grain straw, spread uniformly at the rate of 1 to 2 tons per acre or 100 pounds (2–3 bales) per 1000 square feet. This mulch should be anchored with disc type mulch anchoring tool or other means as approved by the Oakland County Water Resource Commission. Mulch matting may be used in lieu of loose mulch.
- If any dewatering is needed, it shall be discharged through a filter bag over a well vegetated area. The pump must discharge at a non–erosive velocity. If necessary, an approved energy dissipater may be used.
- All dirt tracked onto roadways shall be removed immediately.
- Streets and or parking areas will be scraped on a daily basis and swept at a minimum of once per week by the contractor.
- During dry periods, all disturbed areas shall be watered for dust control.
- Permanent soil erosion control measures for all slopes, channels, ditches, or any disturbed land area shall be completed within 5 calendar days after final grading or the final earth change has been completed. When it is not possible to permanently stabilize a disturbed area after earth change activity ceases, temporary soil erosion control measures shall be implemented immediately. All temporary soil erosion control shall be maintained until permanent soil erosion control measures are implemented. All permanent soil erosion control measures will be implemented and established before a certificate of compliance is issued.
- Final grade, establish vegetation, and/or landscape all disturbed areas not built or paved upon.
- Remove all temporary soil erosion control devices after permanent stabilization is established.

## GENERAL NOTES

### General:

- Contractor to notify Engineer immediately of discrepancies or of missing information.
- Utility locations are depicted from records provided by the respective utility company. Locations, sizes and depths shall be field verified by the contractor.
- Drives shall be accessible at all times unless prior arrangements have been made with the respective property owner(s).
- The contractor shall coordinate all service interruptions with the residents a minimum of 48 hours prior to the interruptions. Contractor is responsible for all notifications.
- All signs within project limits shall be salvaged and reinstalled incidental to the contract.
- All sidewalk curb ramps at intersections shall have ADA 2’ wide Fiberglass detectable warning surfaces. Refer to MDOT detail R–28 and the MDOT Prequalified Products List.
- Contractor shall notify local businesses that will be directly impacted by closures.
- Concrete & composite pavement repairs shall be in accordance with MDOT Standard Detail R–44. Joint types shall match the adjacent joints. If edge of pavement repair is not at an existing joint, a tied joint (Trg) type shall be used.

### Restoration:

- Replace all disturbed curb ramps.
- Restore all disturbed landscape.

### Permits Required:

- MDOT Michigan Department of Transportation
- Oakland County Road Commission work in Right–of–Way
- Oakland County Road Commission Soil Erosion and Sediment Control permit

## LEGEND

| EXISTING |                                   |
|----------|-----------------------------------|
|          | WATER MAIN                        |
|          | SANITARY SEWER                    |
|          | STORM SEWER                       |
|          | GAS MAIN                          |
|          | UNDERGROUND ELECTRIC              |
|          | UNDERGROUND CABLE                 |
|          | UNDERGROUND TELEPHONE/CONDUIT     |
|          | UNDERGROUND FIBER OPTIC           |
|          | SLUDGE LINE                       |
|          | FORCE MAIN                        |
|          | BITUMINOUS PAVEMENT               |
|          | CONCRETE PAVEMENT                 |
|          | GRAVEL DRIVE/SHOULDER             |
|          | FLAGPOLE                          |
|          | LIGHT POLE                        |
|          | GUY ANCHOR                        |
|          | GUY POLE                          |
|          | UTILITY POLE                      |
|          | TELEPHONE MANHOLE                 |
|          | U/G TELEPHONE BOX                 |
|          | U/G CABLE TV BOX                  |
|          | U/G ELECTRIC BOX                  |
|          | GAS METER                         |
|          | ELECTRIC METER                    |
|          | ELECTRIC MANHOLE                  |
|          | ELECTRIC OUTLET                   |
|          | MAILBOX                           |
|          | SIGN                              |
|          | POST                              |
|          | CONCRETE FILLED POST              |
|          | GUARD POST                        |
|          | WATER SERVICE - SHUT OFF          |
|          | GATE VALVE IN WELL                |
|          | SPRINKLER VALVE                   |
|          | SPRINKLER HEAD                    |
|          | FIRE HYDRANT                      |
|          | FIRE HYDRANT VALVE                |
|          | STORM MANHOLE                     |
|          | CATCH BASIN                       |
|          | SANITARY MANHOLE                  |
|          | CLEAN OUT                         |
|          | FOUND IRON/RE-ROD/PIPE            |
|          | FOUND MONUMENT                    |
|          | ELEVATION TAKEN HERE              |
|          | ELECTRIC MARKER                   |
|          | GAS MARKER                        |
|          | CONSUMERS ENERGY GAS MARKER       |
|          | CONSUMERS ENERGY GAS TEST STATION |
|          | GAS LINE TEST STATION             |
|          | GAS VALVE                         |
|          | GAS MANHOLE                       |
|          | GAS LIGHT                         |
|          | GAS STATION FILL PIPE             |
|          | AIR FILL TANK                     |
|          | MONITORING WELL                   |
|          | DECIDUOUS TREE WIDRLINE           |
|          | CONIFEROUS TREE WIDRLINE          |
|          | BUSH                              |

Know what's below  
Call before you dig  
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1-800-482-7171 www.missdig.net

**WARNING**  
UTILITY LOCATIONS ARE NOT  
CONFIRMED. THOSE SHOWN  
ON THESE PLANS ARE THE  
UTILITY OWNERS OR PLANS  
THREE FULL WORKING DAYS  
PRIOR TO BEGINNING WORK.  
THE CONTRACTOR SHALL  
NOT BE RESPONSIBLE FOR  
HARM TO PERSONS OR  
PROPERTY IF THE CONTRACTOR  
DOES NOT PROTECT OR  
HAVE WORK AREA STAKED  
AND HE SHALL PROTECT OR  
HAVE RELOCATED AS NOTED  
ON THE SPECIFICATIONS. ALL  
UTILITIES SHALL BE MAINTAINED  
AND NOT INTERFERED WITH  
CONSTRUCTION.



Township of White Lake  
7525 Highland Rd,  
White Lake, Michigan 48383

PROJECT NOTES  
Triangle Pathway

White Lake, Michigan

| MARK | ISSUED FOR  | DATE    |
|------|-------------|---------|
|      | MDOT REVIEW | 2-22-22 |
|      | PER RCOC    | 6-17-22 |
| -    | -           | -       |
| -    | -           | -       |
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DESIGN BY: -  
CHECKED BY: -

DLZ JOB NUMBER: 2145-7329-00

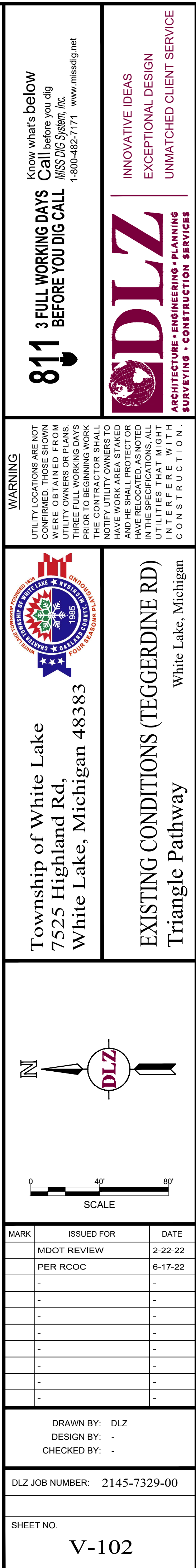
SHEET NO.

G-001

INNOVATIVE IDEAS  
EXCEPTIONAL DESIGN  
UNMATCHED CLIENT SERVICE

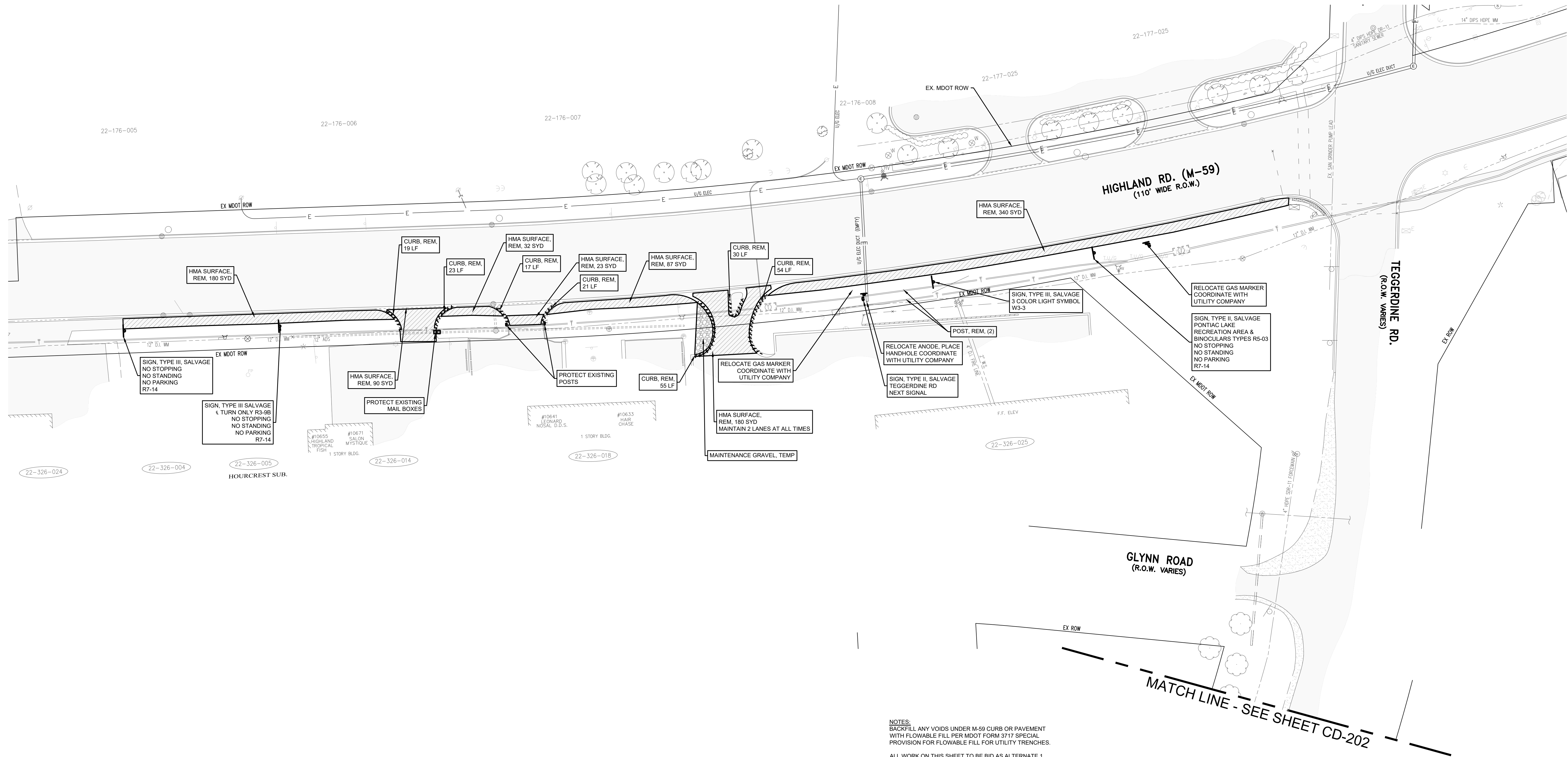








PLOT DATE: 6/17/2022 5:19:53 PM



**NOTES:**  
BACKFILL ANY VOIDS UNDER M-59 CURB OR PAVEMENT  
WITH FLOWABLE FILL PER MDOT FORM 3717 SPECIAL  
PROVISION FOR FLOWABLE FILL FOR UTILITY TRENCHES.

ALL WORK ON THIS SHEET TO BE BID AS ALTERNATE 1.

### LEGEND

PROPOSED

## REMOVE ASPHALT PAVEMENT



## REMOVE CONCRETE PAVEMENT



## REMOVE CONCRETE CURB



REMOVE TREE

**WARNING**

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IN THE SPECIFICATIONS. ALL  
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INTERFERE WITH  
CONSTRUCTION.



Township of White Lake  
7525 Highland Rd,  
White Lake, Michigan 48383

REMOVAL PLAN (HIGHLAND RD)  
Triangle Pathway  
White Lake, Michigan

White Lake, Michigan

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CHECKED BY: -

DLZ JOB NUMBER: 2145-7329-00

SHEET NO.

CD-201

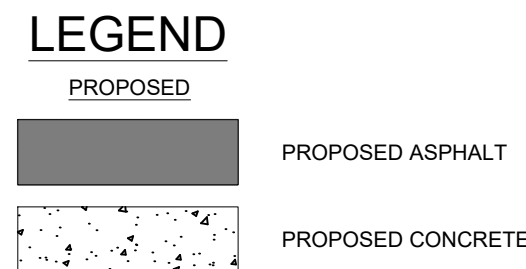
**DLZ**  
ARCHITECTURE • ENGINEERING • PLANNING  
SUSTAINABLE • INFRASTRUCTURAL • EDUCATION

INNOVATIVE IDEAS  
EXCEPTIONAL DESIGN  
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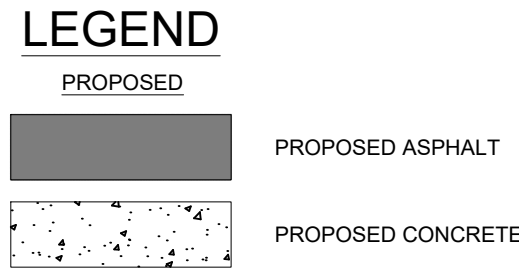
C-30



**DLZ**  
ARCHITECTURE • ENGINEERING • PLANNING

**LAYOUT PLAN (TEGGERDINE RD)**  
Triangle Pathway  
White Lake, Michigan  
"FORM PLAN"

PLOT DATE: 12/15/2023 2:47:17 PM

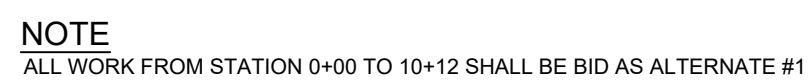
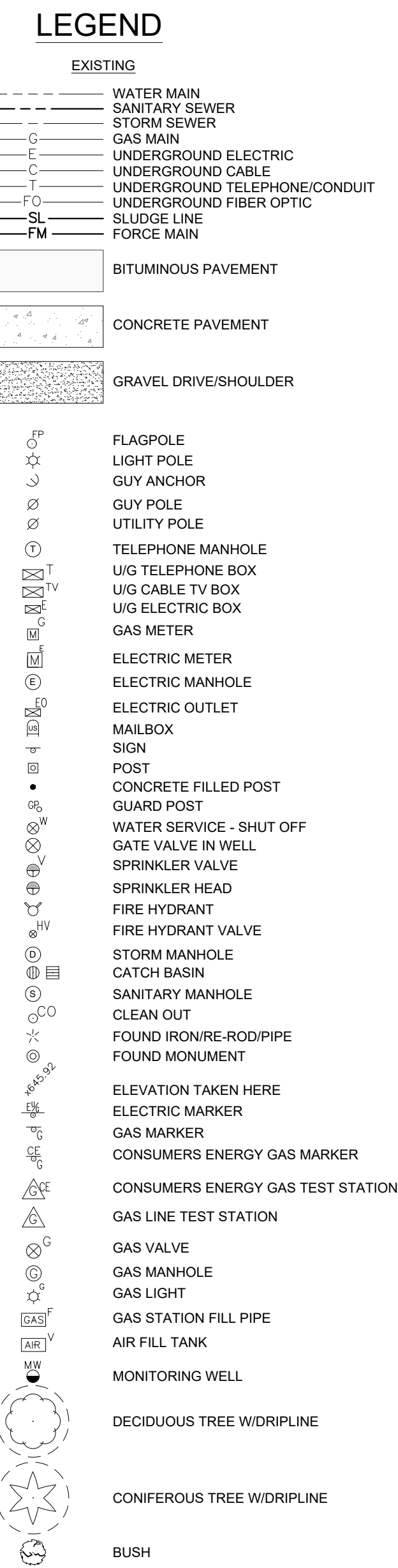


LAYOUT PLAN (ELIZABETH LAKE RD)  
Triangle Pathway  
White Lake, Michigan

C-303

**DLZ**  
ARCHITECTURE • ENGINEERING • PLANNING  
INTERNATIONAL, INC.

INNOVATIVE IDEAS  
EXCEPTIONAL DESIGN  
UNMATCHED CLIENT SERVICE



**DLZ**  
ARCHITECTURE • ENGINEERING • PLANNING  
SURVEYING • CONSTRUCTION SERVICES

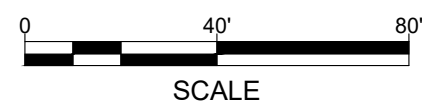
UTILITY LOCATIONS ARE NOT  
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UTILITIES THAT MIGHT  
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CONSTRUCTION



PLAN & PROFILE (HIGHLAND ROAD 0+00-10+14)

Triangle Pathway

White Lake, Michigan

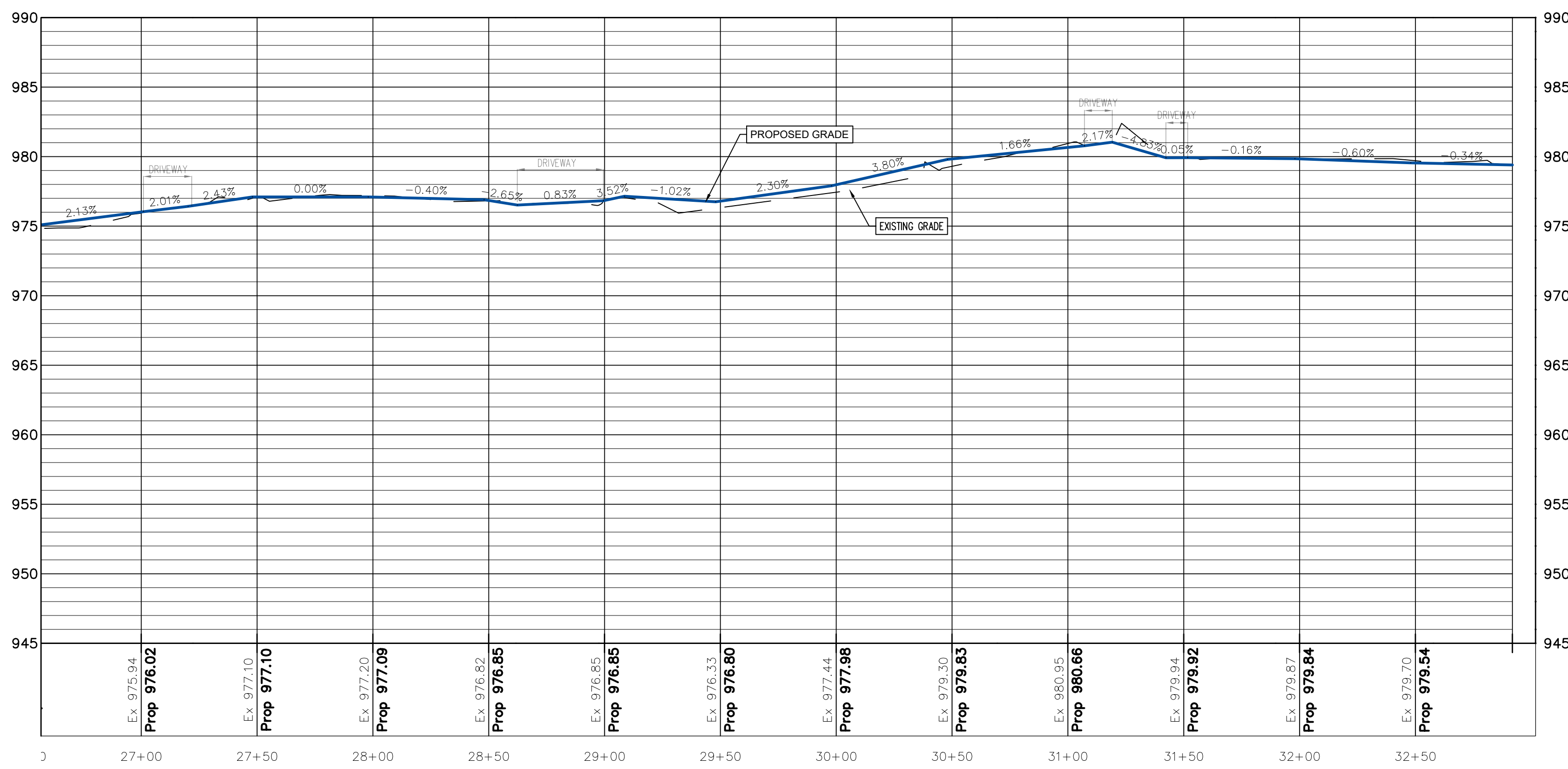
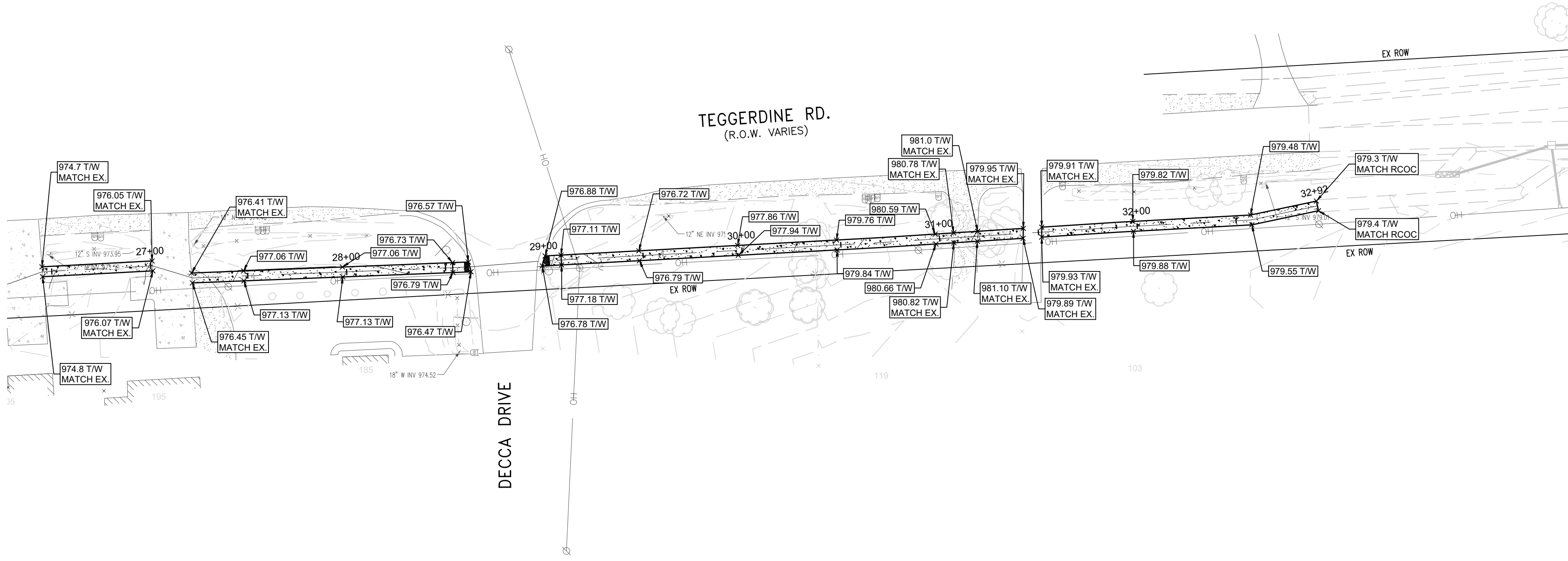
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DLZ JOB NUMBER: 2145-7329-00

C-401







### LEGEND

**EXISTING**

- WATER MAIN
- SANITARY SEWER
- STORM SEWER
- GAS MAIN
- UNDERGROUND ELECTRIC
- UNDERGROUND CABLE
- UNDERGROUND TELEPHONE/CONDUIT
- UNDERGROUND FIBER OPTIC
- SLUDGE LINE
- FORCE MAIN

BITUMINOUS PAVEMENT

CONCRETE PAVEMENT

GRAVEL DRIVE/SHOULDER

- FLAGPOLE
- LIGHT POLE
- GUY ANCHOR
- GUY POLE
- UTILITY POLE
- TELEPHONE MANHOLE
- U/G TELEPHONE BOX
- U/G CABLE TV BOX
- U/G ELECTRIC BOX
- GAS METER
- ELECTRIC METER
- ELECTRIC MANHOLE
- ELECTRIC OUTLET
- MAILBOX
- SIGN
- POST
- CONCRETE FILLED POST
- GUARD POST
- WATER SERVICE - SHUT OFF
- GATE VALVE IN WELL
- SPRINKLER VALVE
- SPRINKLER HEAD
- FIRE HYDRANT
- FIRE HYDRANT VALVE
- STORM MANHOLE
- CATCH BASIN
- SANITARY MANHOLE
- CLEAN OUT
- FOUND IRON/RE-ROD/PIPE
- FOUND MONUMENT
- ELEVATION TAKEN HERE
- ELECTRIC MARKER
- GAS MARKER
- CONSUMERS ENERGY GAS MARKER
- GAS LINE TEST STATION
- GAS VALVE
- GAS MANHOLE
- GAS LIGHT
- GAS STATION FILL PIPE
- AIR FILL TANK
- MONITORING WELL
- DECIDUOUS TREE WIDRILINE
- CONIFEROUS TREE WIDRILINE
- BUSH

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1-800-482-7171 www.missdig.net

**811** 3 FULL WORKING DAYS  
BEFORE YOU DIG CALL

INNOVATIVE IDEAS  
EXCEPTIONAL DESIGN  
UNMATCHED CLIENT SERVICE

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SURVEYING • CONSTRUCTION SERVICES

**WARNING**

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Township of White Lake  
7525 Highland Rd,  
White Lake, Michigan 48383

PLAN & PROFILE (TEGGERDINE ROAD 26+50-32+98)  
Triangle Pathway

White Lake, Michigan

0 40' 80'  
SCALE

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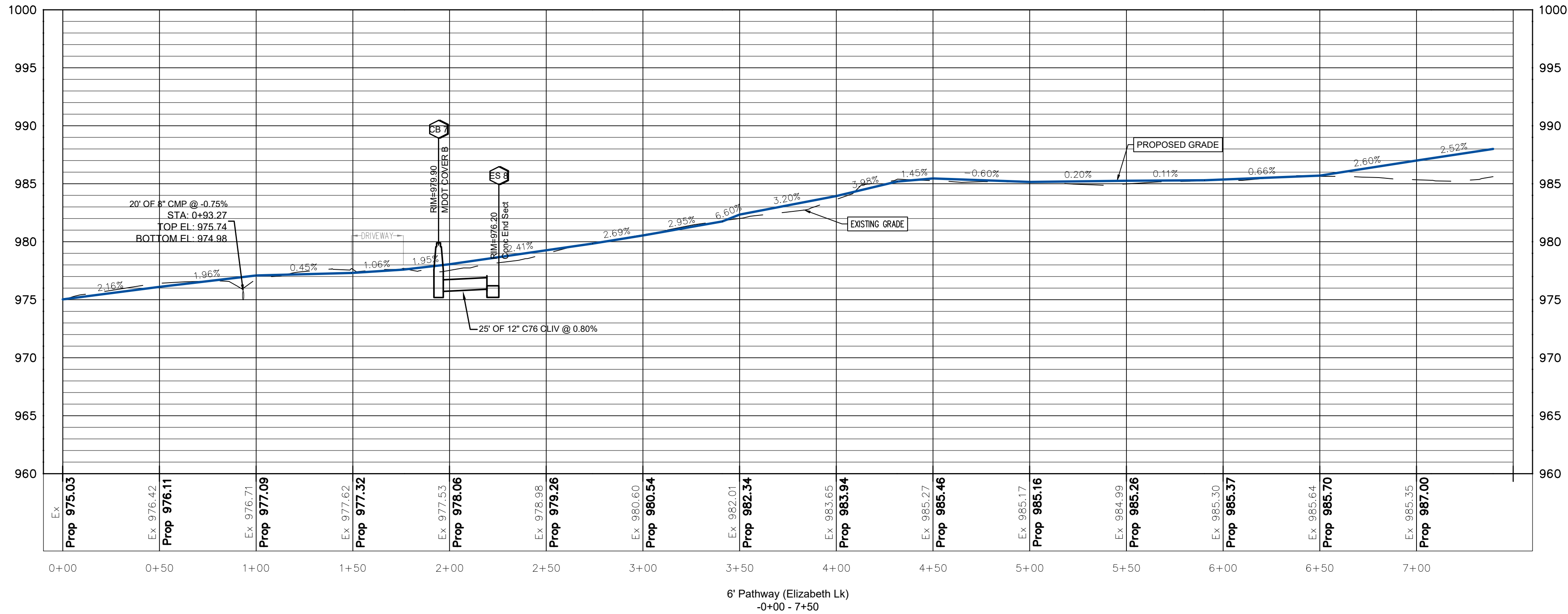
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| MARK | ISSUED FOR  | DATE    |
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|      | MDOT REVIEW | 2-22-22 |
|      | PER RCOC    | 6-17-22 |
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CHECKED BY: -

DLZ JOB NUMBER: 2145-7329-00

SHEET NO.  
**C-404**



- |                                                                                       |                                   |
|---------------------------------------------------------------------------------------|-----------------------------------|
|    | FLAGPOLE                          |
|    | LIGHT POLE                        |
|    | GUY ANCHOR                        |
|    | GUY POLE                          |
|    | UTILITY POLE                      |
|    | TELEPHONE MANHOLE                 |
|    | U/Ig TELEPHONE BOX                |
|    | U/Ig CABLE TV BOX                 |
|    | U/Ig ELECTRIC BOX                 |
|    | GAS METER                         |
|    | ELECTRIC METER                    |
|    | ELECTRIC MANHOLE                  |
|    | ELECTRIC OUTLET                   |
|    | MAILBOX                           |
|    | SIGN                              |
|    | POST                              |
|    | CONCRETE FILLED POST              |
|    | GUARD POST                        |
|    | WATER SERVICE - SHUT OFF          |
|    | GATE VALVE IN WELL                |
|    | SPRINKLER VALVE                   |
|    | SPRINKLER HEAD                    |
|    | FIRE HYDRANT                      |
|    | STORM MANHOLE                     |
|    | CATCH BASIN                       |
|    | SANITARY MANHOLE                  |
|    | CLEAN OUT                         |
|    | FOUND IRON/IRON-ROD/PIPE          |
|    | FOUND MONUMENT                    |
|   | ELEVATION TAKEN HERE              |
|  | ELECTRIC MARKER                   |
|  | GAS MARKER                        |
|  | CONSUMERS ENERGY GAS TEST STATION |

Township of White Lake  
7525 Highland Rd,  
White Lake, Michigan 48383

PLAN & PROFILE (ELIZABETH  
Triangle Pathway

Township of White Lake  
7525 Highland Rd,  
White Lake, Michigan 48886

PLAN & PROFILE (ELIZABETH)  
Triangle Pathway

[illegible]

DLZ JOB NUMBER: 2145-7329-00

SHEET NO.

C-405

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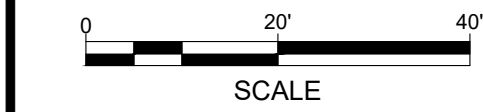
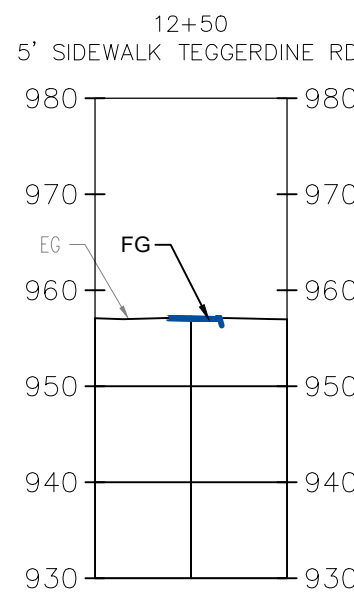
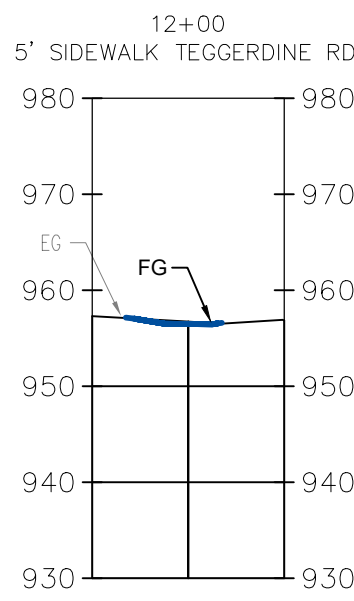
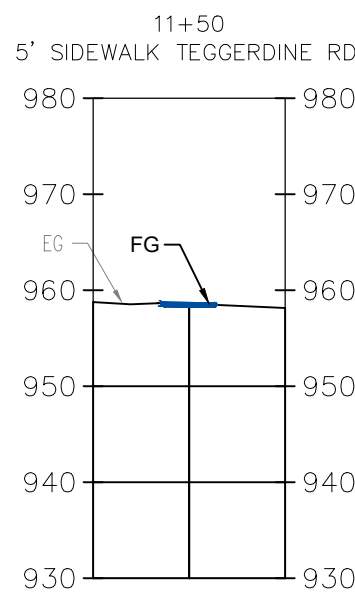
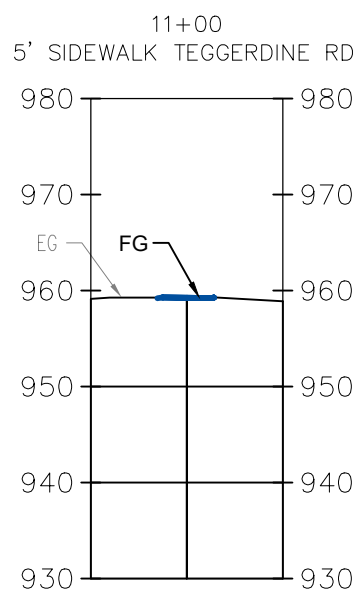
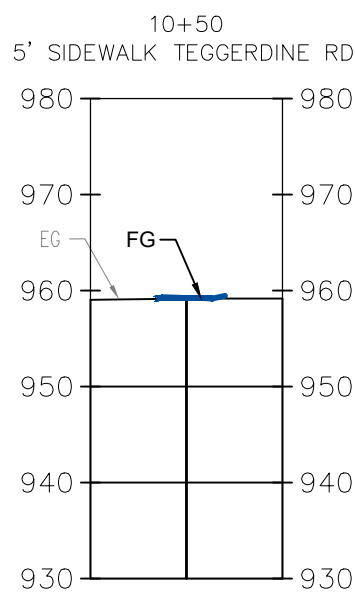
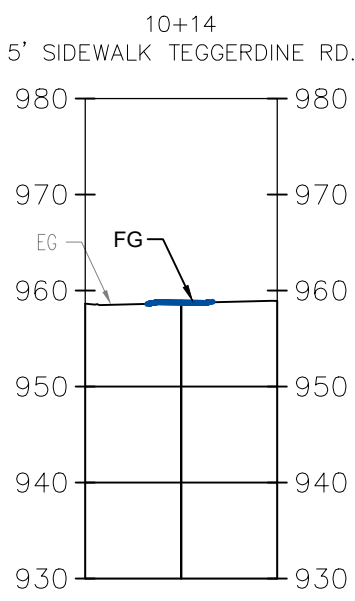
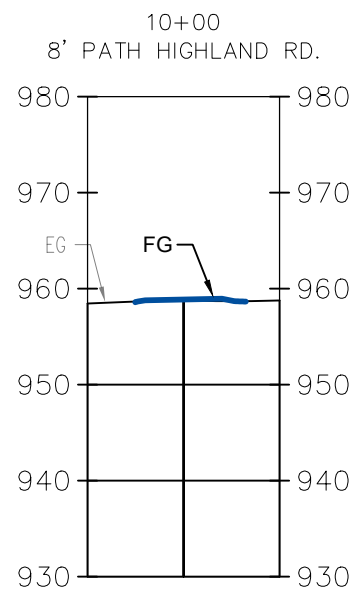
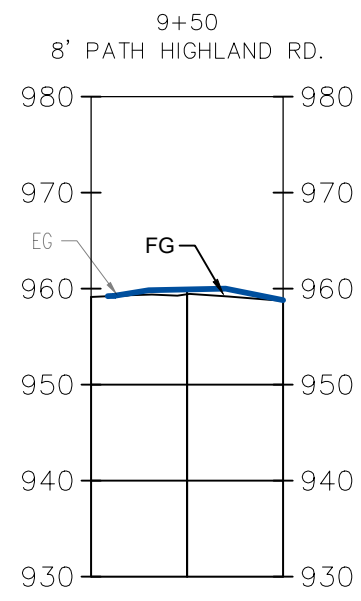
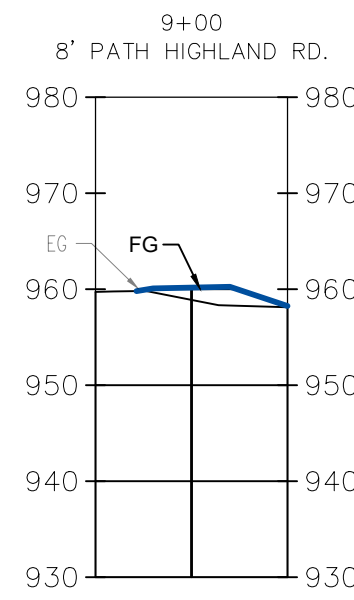
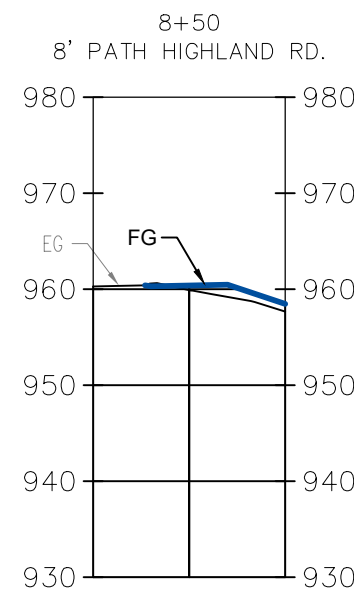
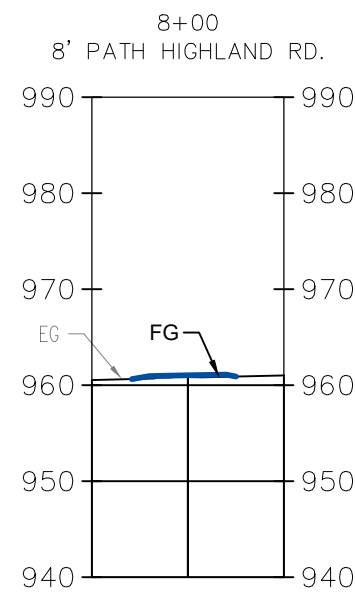
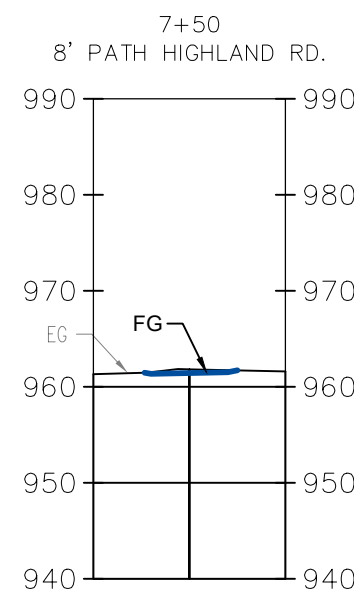
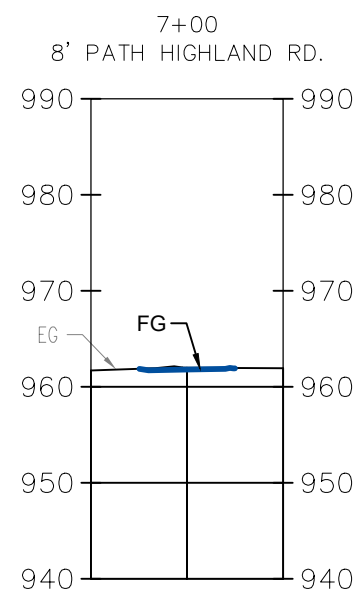
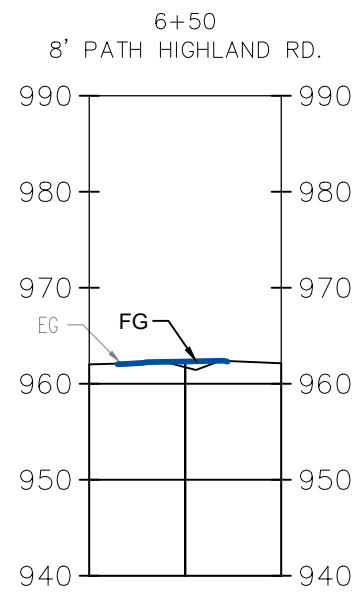
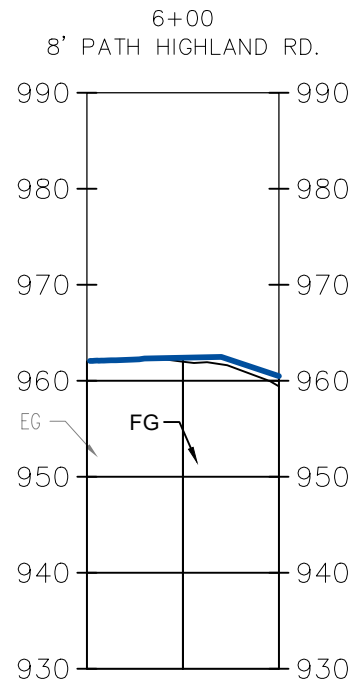
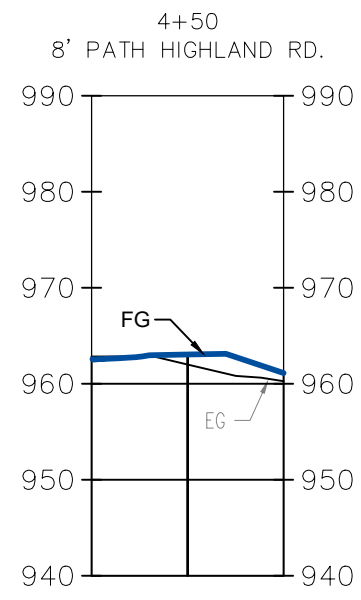
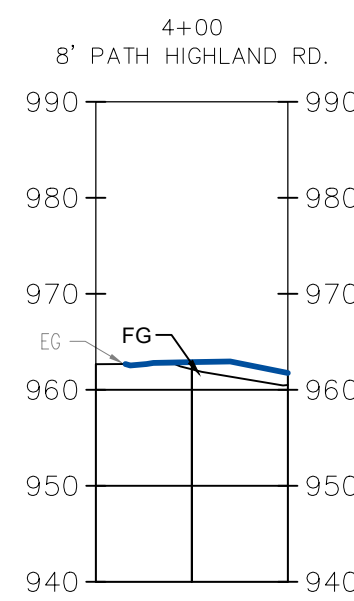
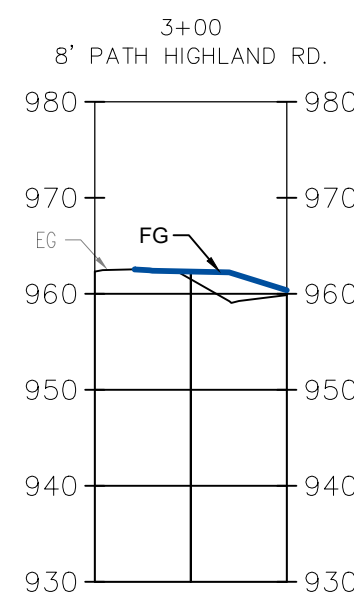
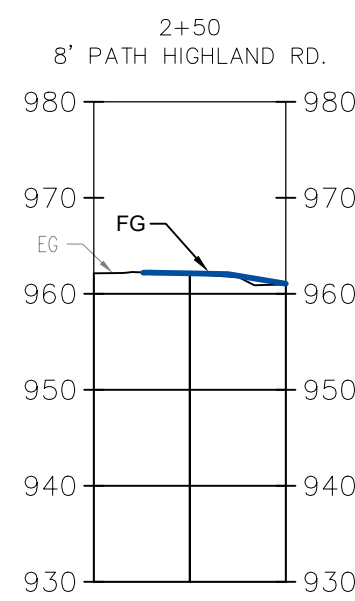
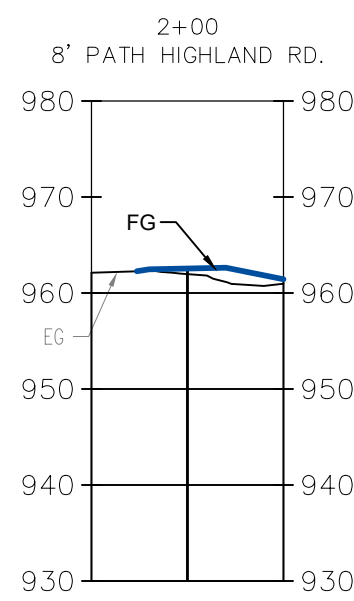
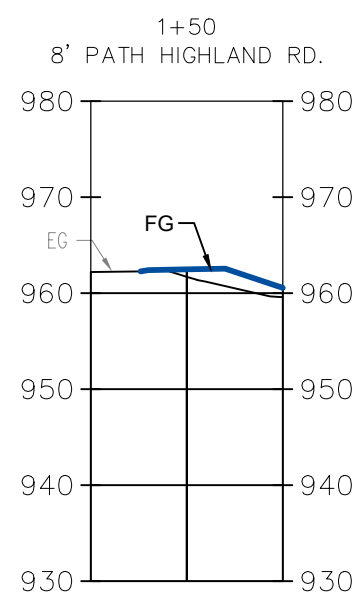
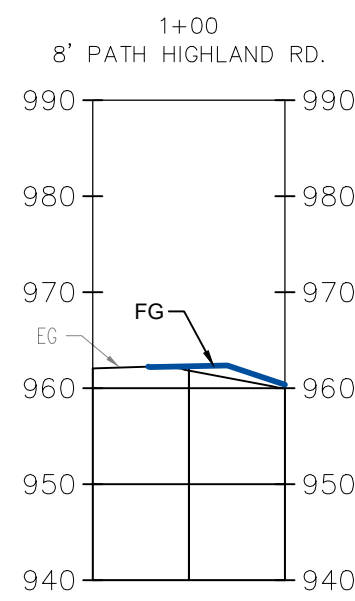
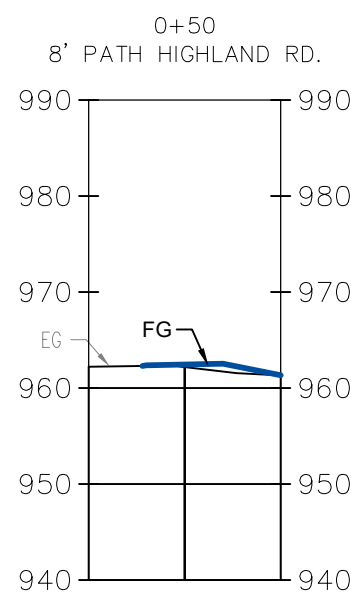
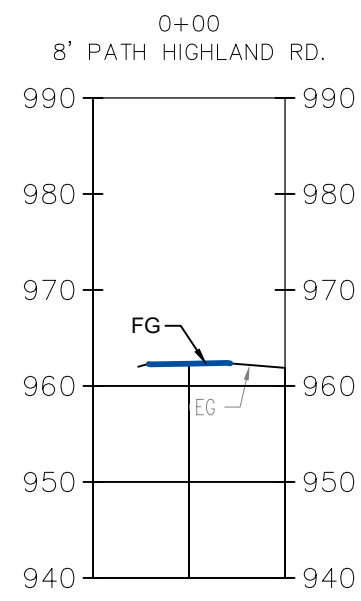
INNOVATIVE IDEAS  
EXCEPTIONAL DESIGN  
UNMATCHED CLIENT SERVICE

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Layout = Cross Section

D:\Projects\2021\2145732900 White Lake Township\01\_Construction\DWG\Drawings\2145732900 8000.dwg  
DANIEL KWONG

SAVE DATE: 6/17/2022 5:46:31 AM

PLOT DATE: 6/17/2022 5:22:25 PM



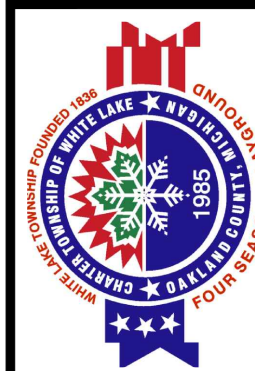
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|------|-------------|---------|
|      | MDOT REVIEW | 2-22-22 |
|      | PER RCOC    | 6-17-22 |
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DRAWN BY: DLZ  
DESIGN BY: -  
CHECKED BY: -

DLZ JOB NUMBER: 2145-7329-00

SHEET NO.

C-406



Township of White Lake  
7525 Highland Rd,  
White Lake, Michigan 48383

CROSS SECTIONS  
Triangle Pathway

White Lake, Michigan

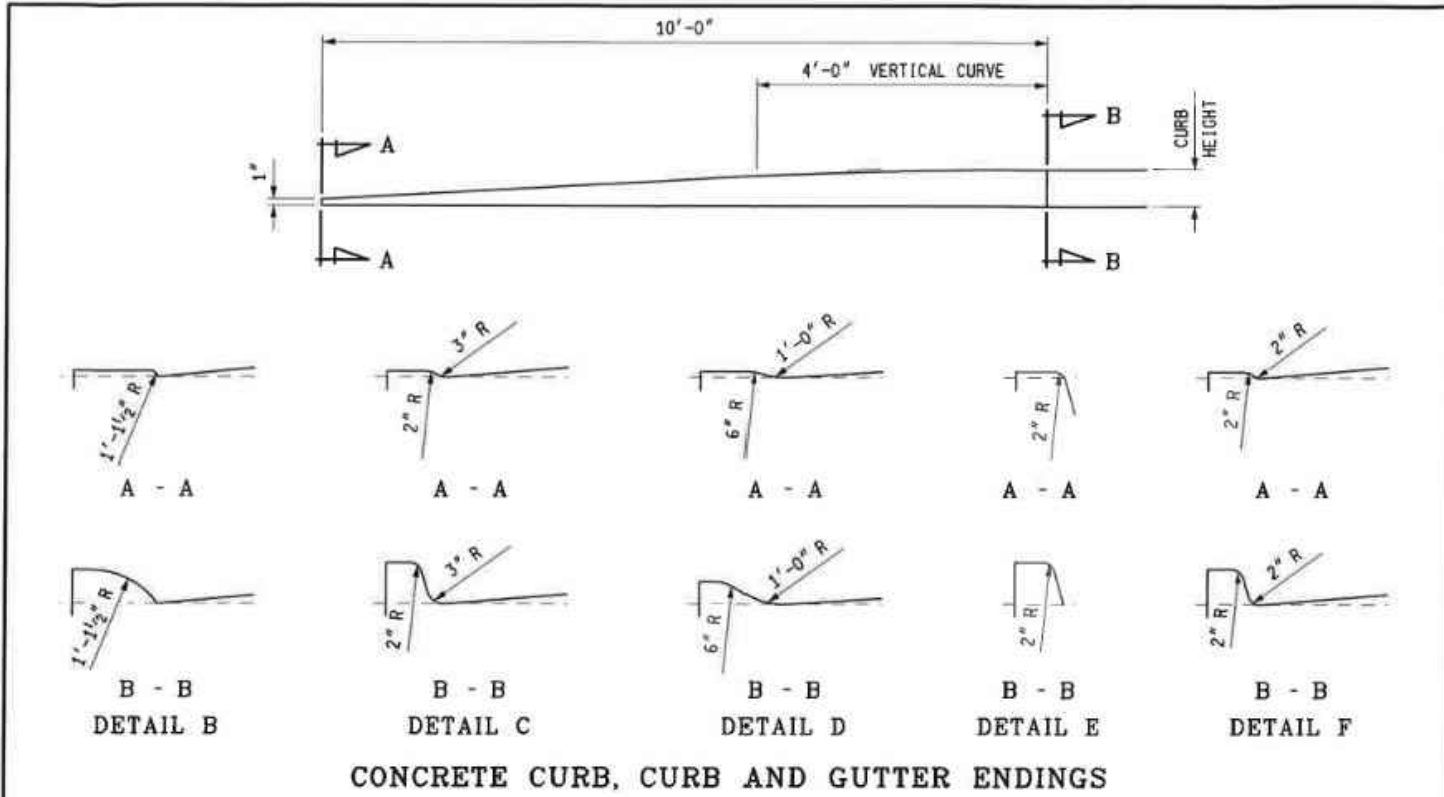
WARNING

UTILITY LOCATIONS ARE NOT  
CONFIRMED. THOSE SHOWN  
ON THIS PLAN ARE THE  
UTILITY OWNERS OR PLANS.  
THREE FULL WORKING DAYS  
PRIOR TO BEGINNING WORK  
THE CONTRACTOR SHALL  
VERIFY THE LOCATION OF ALL  
UTILITIES. THE CONTRACTOR  
HAVE WORK AREA STAKED  
AND HE SHALL PROTECT OR  
HAVE RELOCATED AS NOTED  
ON THE SPECIFICATIONS. ALL  
UTILITIES SHALL BE PROTECTED  
AND SHALL NOT BE  
INTERFERED WITH  
CONSTRUCTION

811  
3 FULL WORKING DAYS  
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INNOVATIVE IDEAS  
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NOTES:

CURB AND GUTTER RADI SHALL BE DIMENSIONED TO THE FRONT EDGE OF THE GUTTER PAN OR EDGE OF PAVEMENT.

CONCRETE CURB AND GUTTER ENDINGS WILL BE PAID FOR IN LINEAR FEET OF THE ADJACENT CURB DETAIL.

JOINTS SHALL BE PLACED AT RIGHT ANGLES TO THE EDGE OF CONCRETE CURB AND GUTTER.

JOINTS DETAILED ON THE PLANS SHALL SUPERSEDE THOSE SPECIFIED ON THIS STANDARD PLAN.

BOTTOM SLOPE OF CURB AND GUTTER STRUCTURE MAY BE THE SAME SLOPE AS BOTTOM OF PAVEMENT. BACK OF CURB AND VERTICAL EDGE OF GUTTER PAN MAY HAVE A MAXIMUM 1/2" BATTER TO FACILITATE FORMING.

WHEN CURB AND GUTTER IS CAST INTEGRALLY, SEE CURRENT STANDARD PLAN R-31-SERIES.

ALL JOINTS FOR CURB OR CURB AND GUTTER ARE INCLUDED IN THE PAY ITEM FOR THE CURB OR CURB AND GUTTER.

JOINTS IN CURB OR CURB AND GUTTER NOT TIED TO CONCRETE PAVEMENT ADJACENT TO CONCRETE BASE COURSE OR ADJACENT TO HMA PAVEMENT:

A. PLACE 1" FIBER JOINT FILLER AT 400' MAXIMUM INTERVALS.

B. PLACE 1" FIBER JOINT FILLER AT SPRING POINTS OF INTERSECTING STREETS.

C. PLACE 1/2" ISOLATION JOINT AT CATCH BASINS PER STANDARD PLAN R-37-SERIES.

D. PLACE CONTRACTION JOINTS AT 40' MAXIMUM INTERVALS.

JOINTS IN CURB OR CURB AND GUTTER TIED TO JOINTED PAVEMENT:

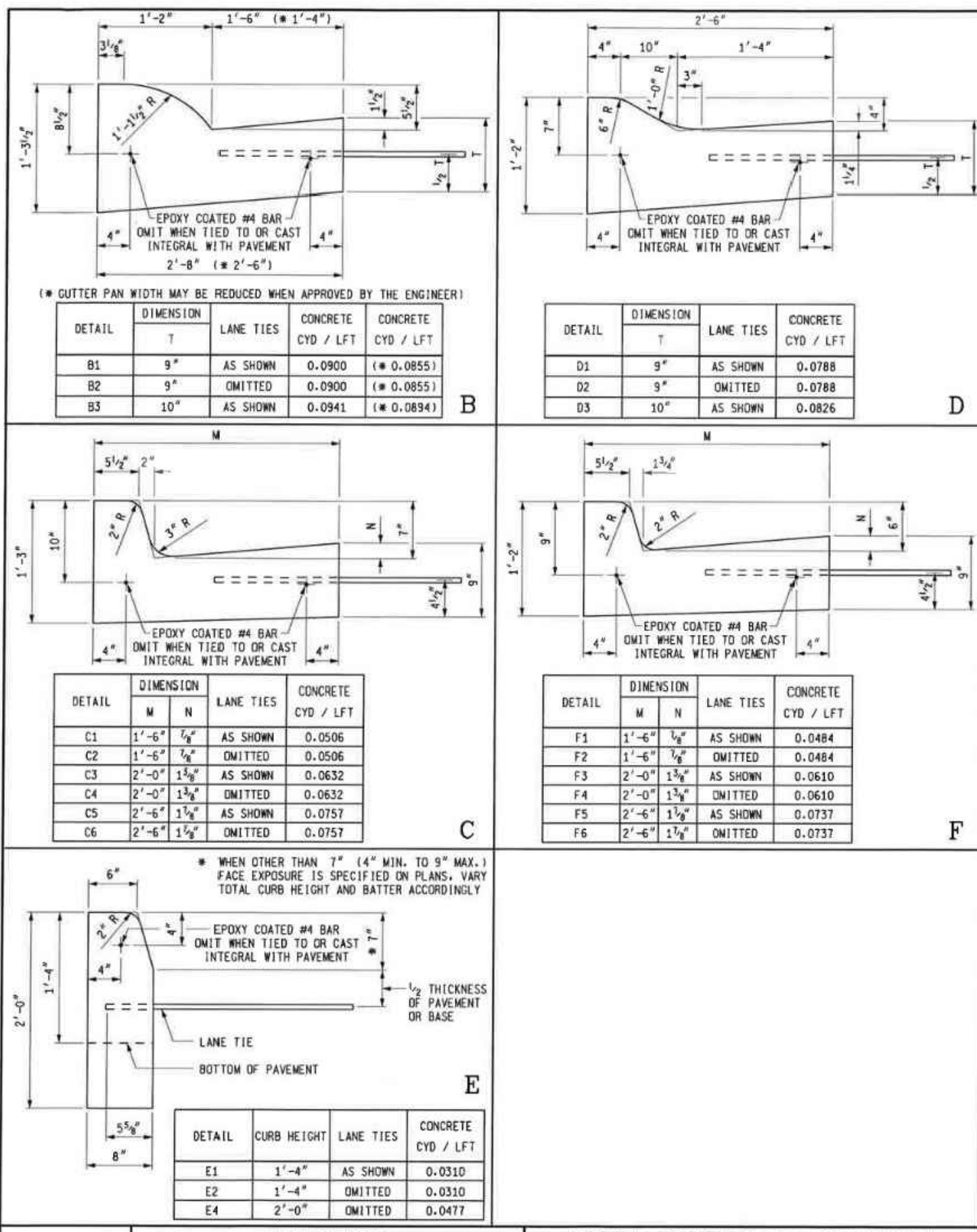
A. PLACE 1" FIBER JOINT FILLER OPPOSITE ALL TRANSVERSE EXPANSION JOINTS IN PAVEMENT.

B. PLACE 1/2" ISOLATION JOINT AT CATCH BASINS PER STANDARD PLAN R-37-SERIES.

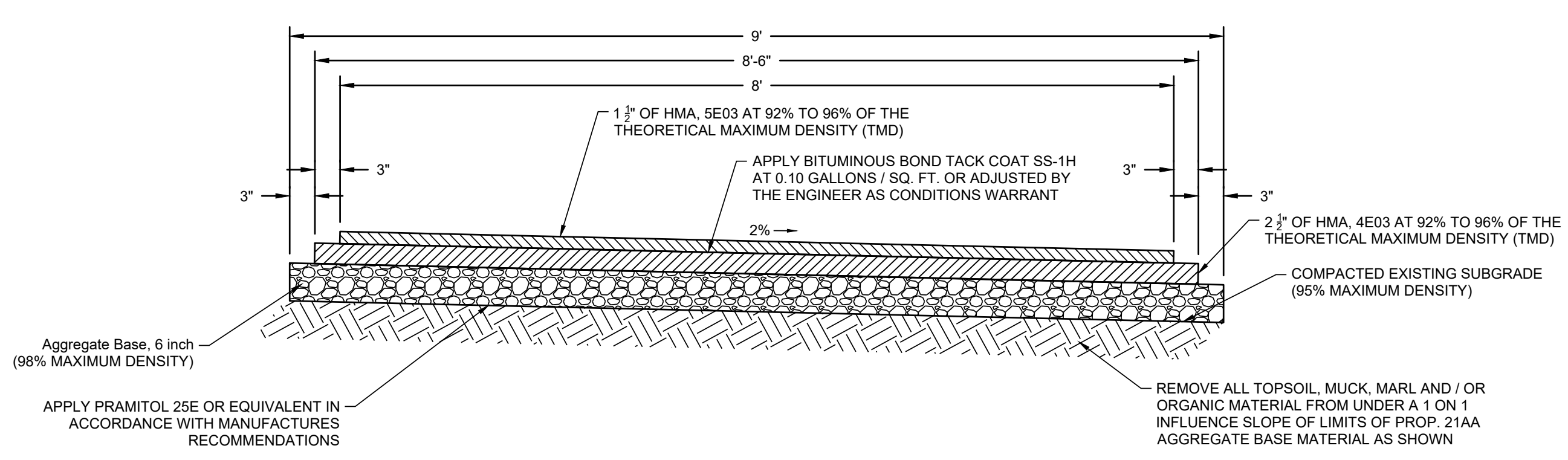
C. PLACE CONTRACTION JOINTS OPPOSITE ALL TRANSVERSE CONTRACTION JOINTS IN PAVEMENT.

D. A SYMBOL (B) JOINT SHALL BE PLACED BETWEEN CURB OR CURB AND GUTTER AND ADJACENT CONCRETE PAVEMENT AS SPECIFIED ON STANDARD PLAN R-41-SERIES.

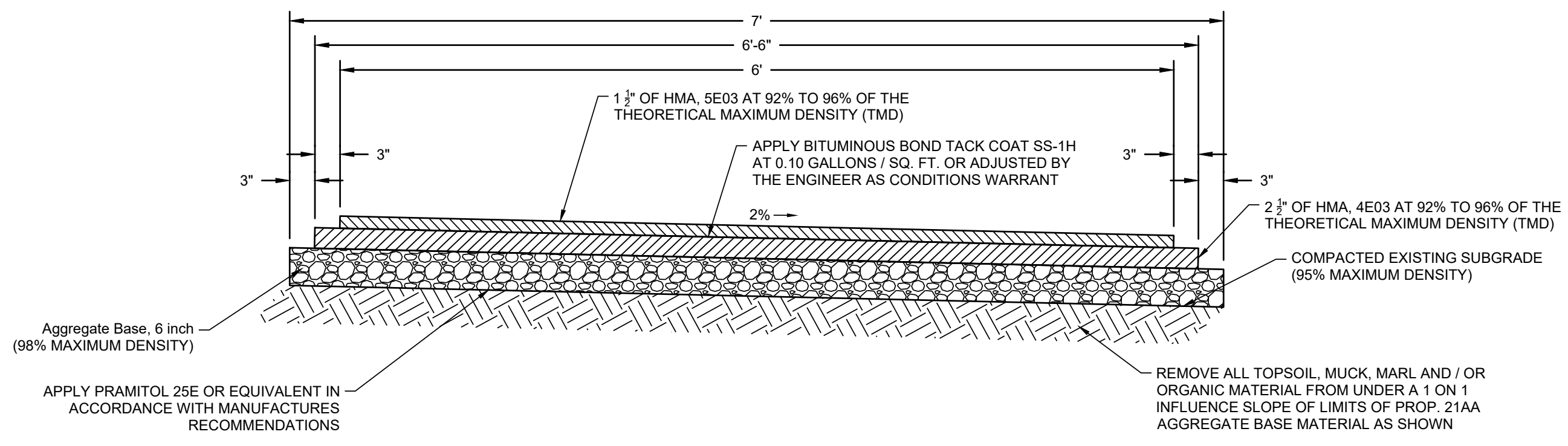
| MICHIGAN DEPARTMENT OF TRANSPORTATION<br>BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR |                       |        |                 |
|------------------------------------------------------------------------------------------|-----------------------|--------|-----------------|
| CONCRETE CURB AND<br>CONCRETE CURB & GUTTER                                              |                       |        |                 |
| 9-30-2014<br>F.I.R.A. APPROVAL                                                           | 2-6-2014<br>PLAN DATE | R-30-G | SHEET<br>2 OF 2 |



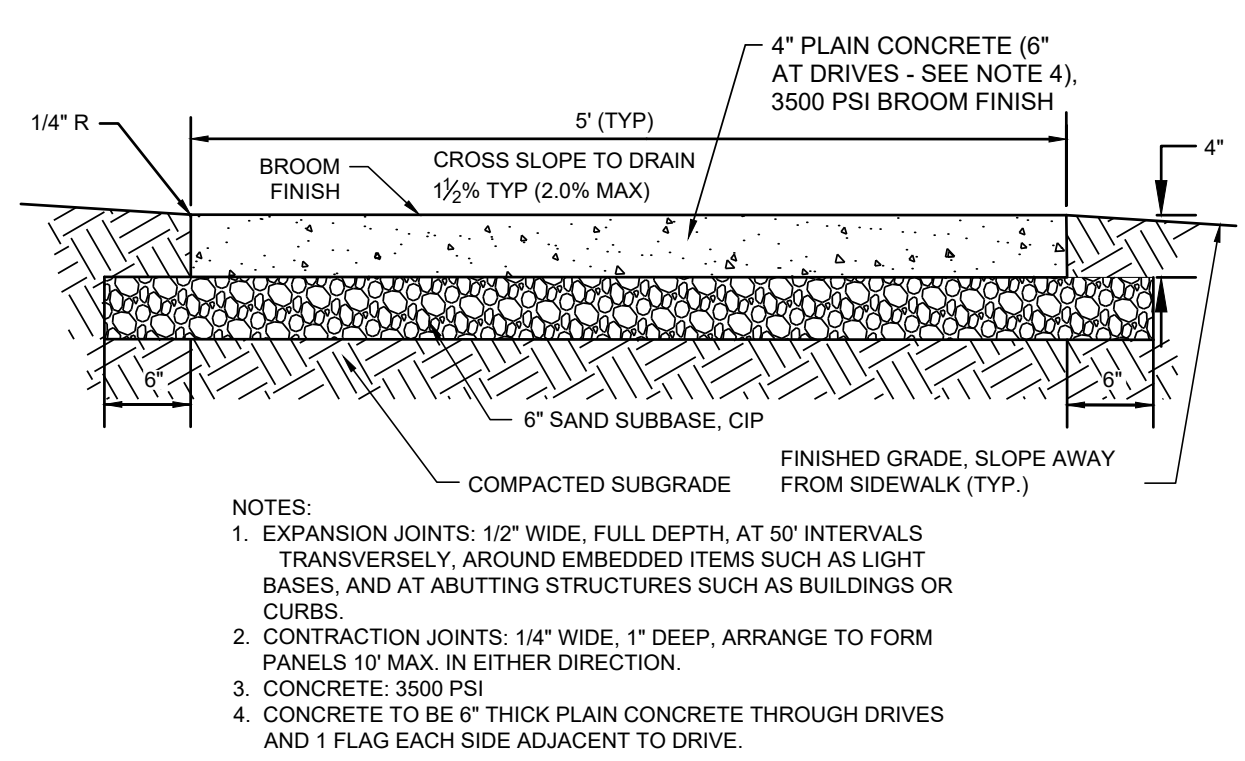
| MICHIGAN DEPARTMENT OF TRANSPORTATION<br>BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR |                       |        |                 |
|------------------------------------------------------------------------------------------|-----------------------|--------|-----------------|
| CONCRETE CURB AND<br>CONCRETE CURB & GUTTER                                              |                       |        |                 |
| 9-30-2014<br>F.I.R.A. APPROVAL                                                           | 2-6-2014<br>PLAN DATE | R-30-G | SHEET<br>1 OF 2 |



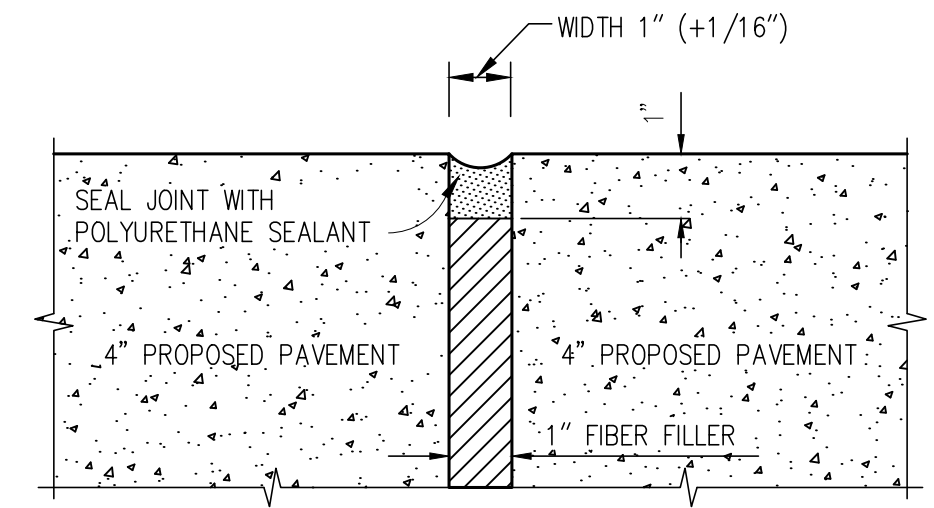
TYPICAL 8 FT. BITUMINOUS PATHWAY SECTION (HIGHLAND RD.)  
NOT TO SCALE  
(ALTERNATE BID)



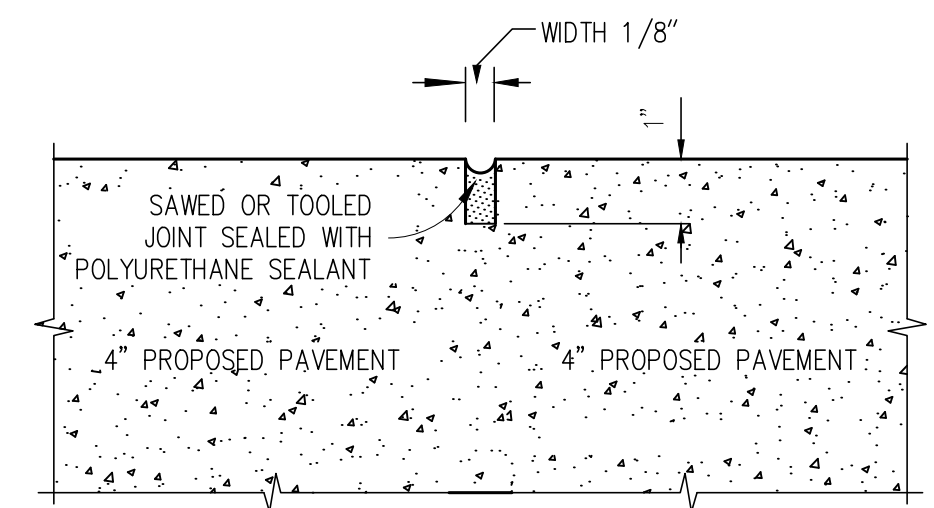
TYPICAL 6 FT. BITUMINOUS PATHWAY SECTION (ELIZABETH LAKE RD.)  
NOT TO SCALE



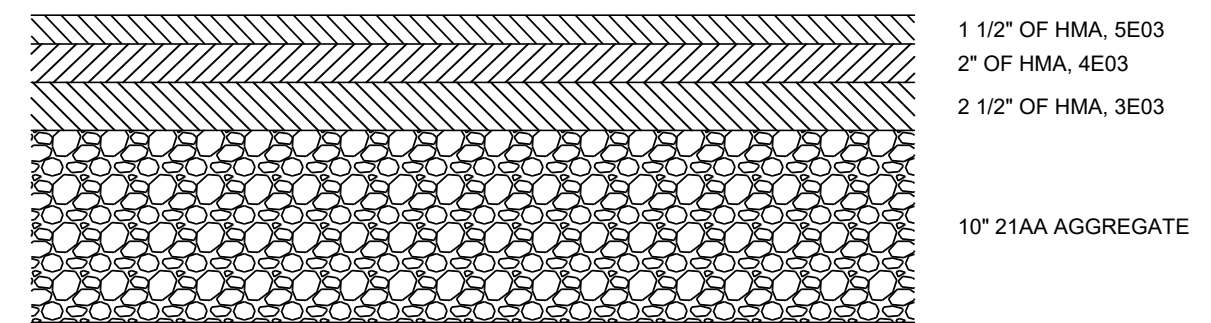
PROPOSED TEGGERDINE ROAD  
SIDEWALK PAVEMENT SECTION  
NOT TO SCALE



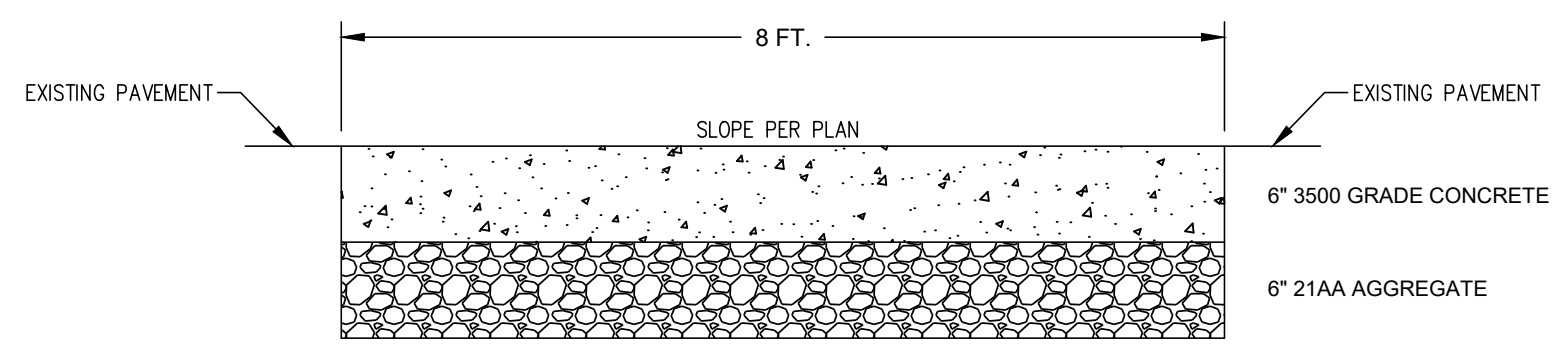
EXPANSION JOINT (EJ)  
NOT TO SCALE



CONTROL JOINT (CJ2)  
NOT TO SCALE



HMA APPROACH SECTION  
NOT TO SCALE



WALK THROUGH DRIVE OPENING (M-59)  
ALTERNATE BID  
NOT TO SCALE

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SURVEYING • CONSTRUCTION SERVICES

WARNING

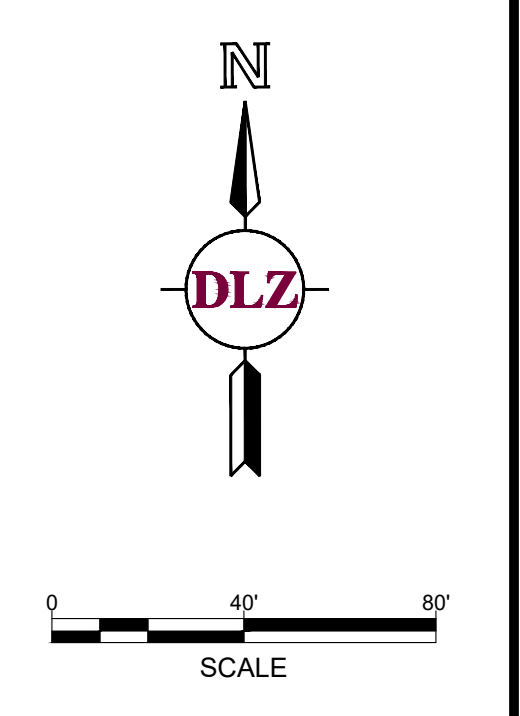
UTILITY LOCATIONS ARE NOT  
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UTILITY OWNERS OR PLANS  
THREE FULL WORKING DAYS  
PRIOR TO BEGINNING WORK.  
THE CONTRACTOR SHALL  
VERIFY THE LOCATION, DEPTH  
AND HE SHALL PROTECT OR  
HAVE WORK AREA STAKED  
AND RELOCATED AS NOTED  
ON THE SPECIFICATIONS. ALL  
UTILITIES SHALL BE MAINTAINED  
AND NOT INTERFERED WITH  
CONSTRUCTION.



Township of White Lake  
7525 Highland Rd,  
White Lake, Michigan 48383

SITE DETAILS  
Triangle Pathway

White Lake, Michigan

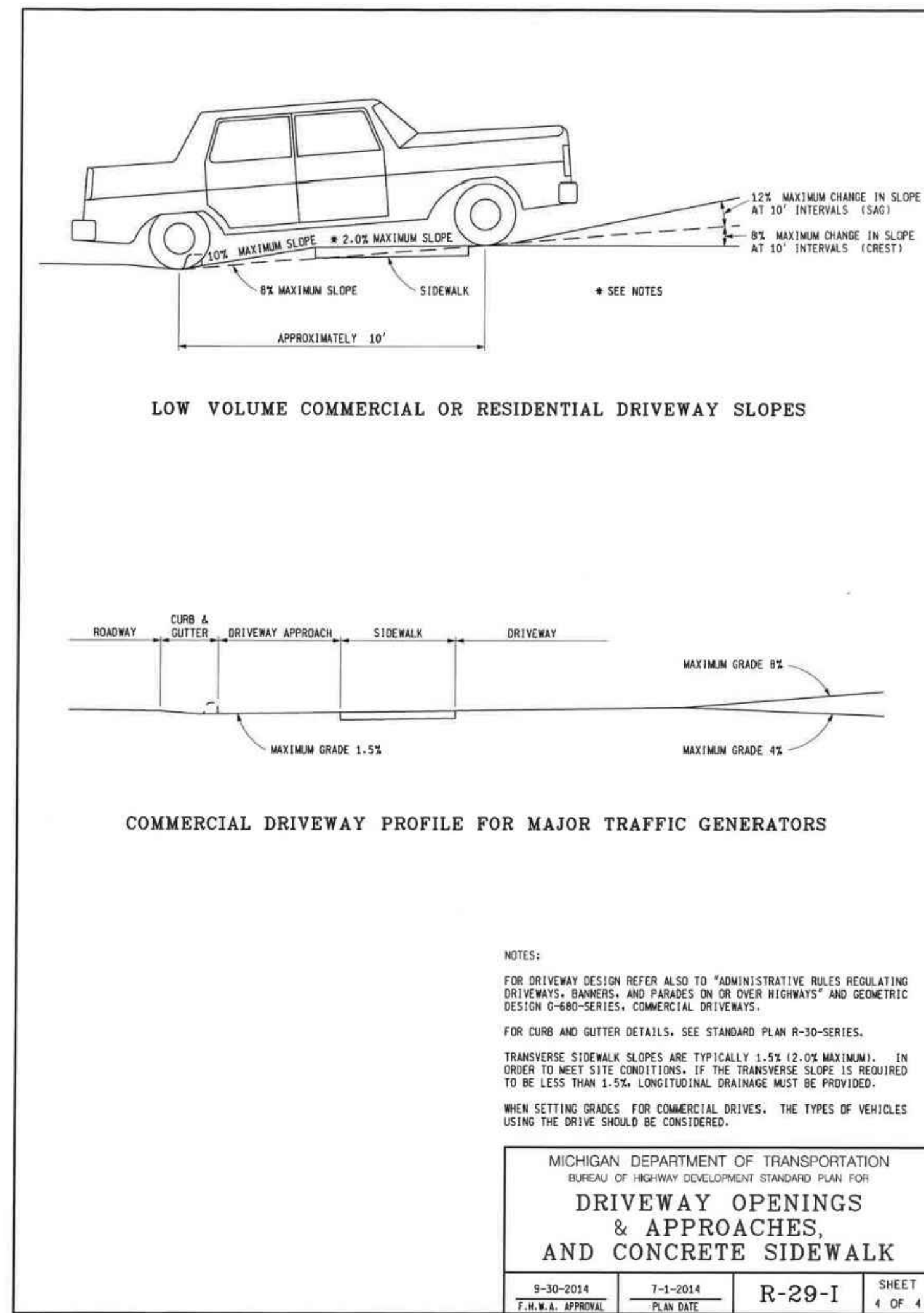
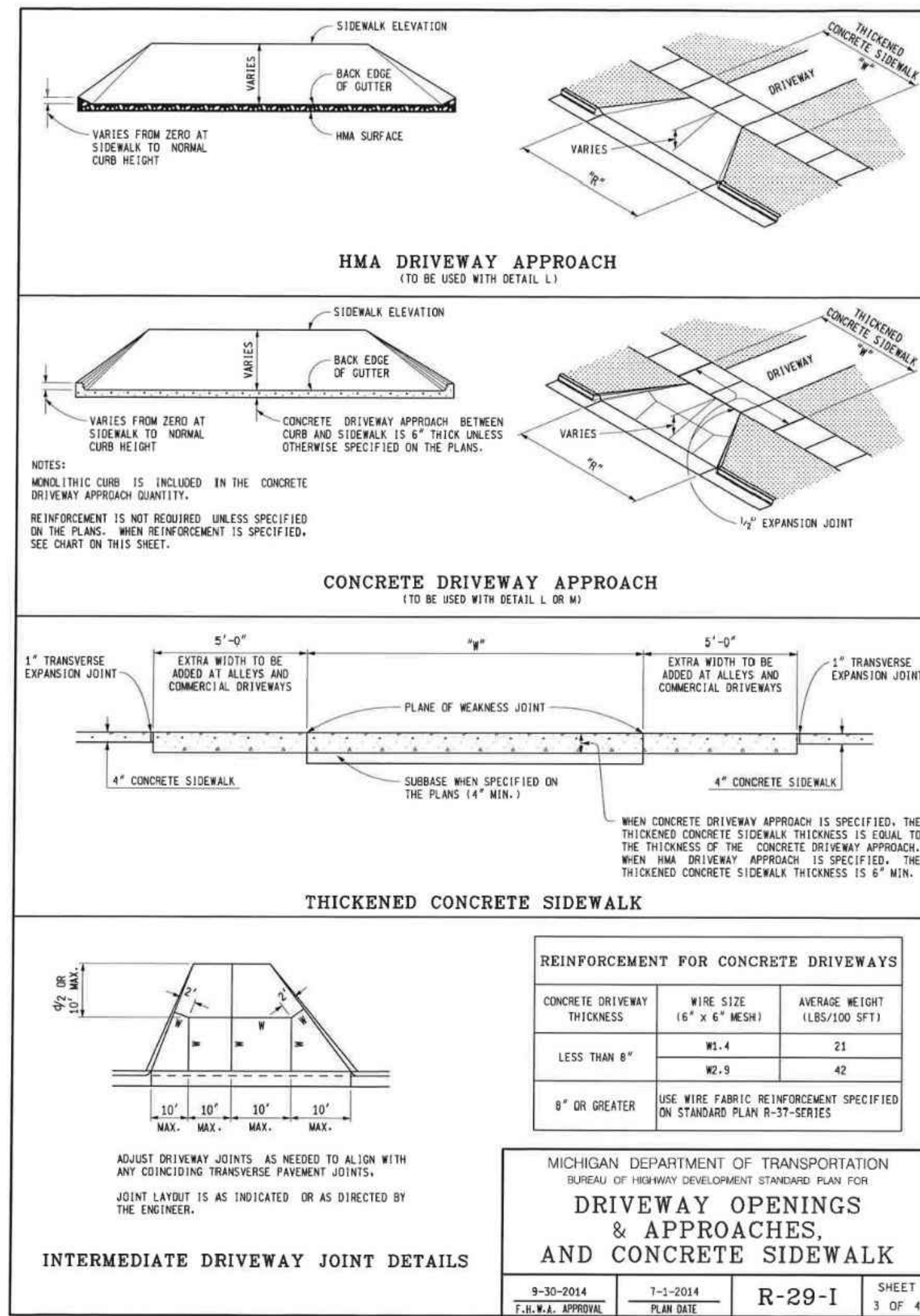


| MARK | ISSUED FOR  | DATE    |
|------|-------------|---------|
| -    | MDOT REVIEW | 2-22-22 |
| -    | PER RCOC    | 6-17-22 |
| -    | -           | -       |
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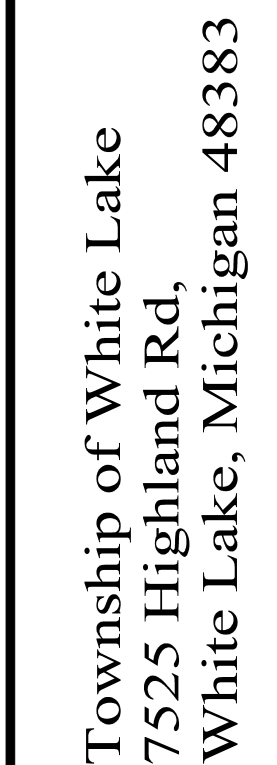
DRAWN BY: DLZ  
DESIGN BY: -  
CHECKED BY: -

DLZ JOB NUMBER: 2145-7329-00

SHEET NO.  
C-501



## WARNING

[illegible]

DLZ JOB NUMBER: 2145-7329-00

SHEET NO.

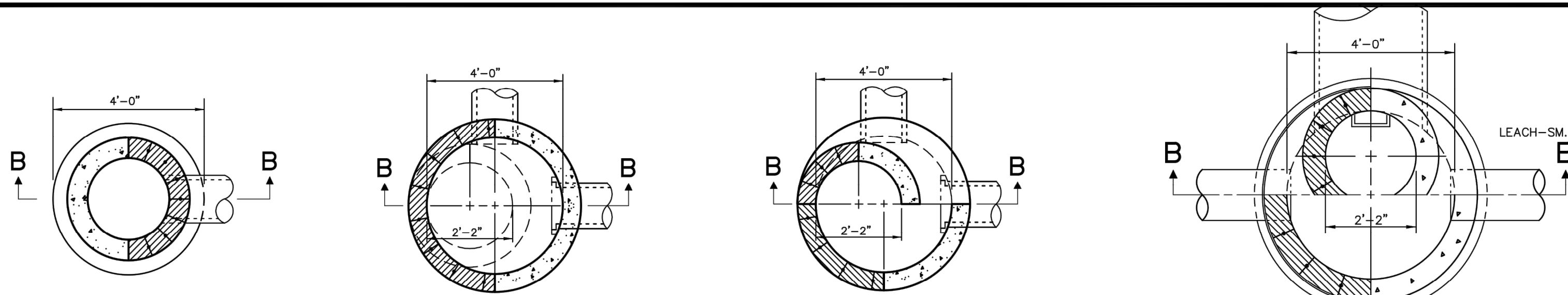
C-502

NOTIFY UTILITY OWNERS TO HAVE WORK AREA STAKED AND HE SHALL PROTECT OR HAVE RELOCATED, AS NOTED IN THE SPECIFICATIONS, ALL UTILITIES THAT MIGHT INTERFERE WITH CONSTRUCTION.

White Lake, Michigan

# SITE DETAILS

## Triangle Pathway

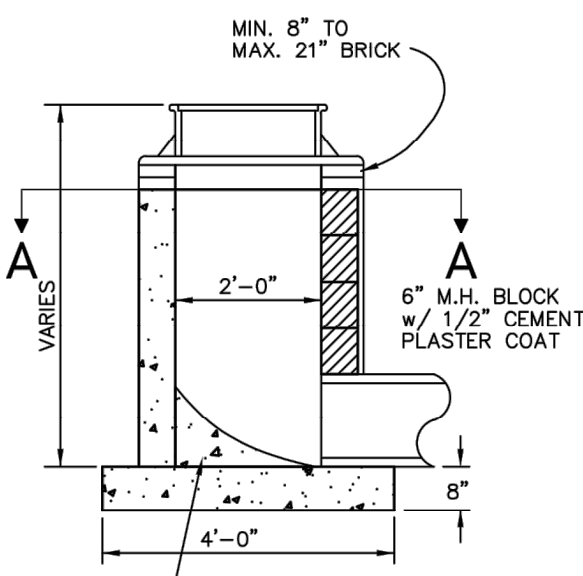


SECTION A-A

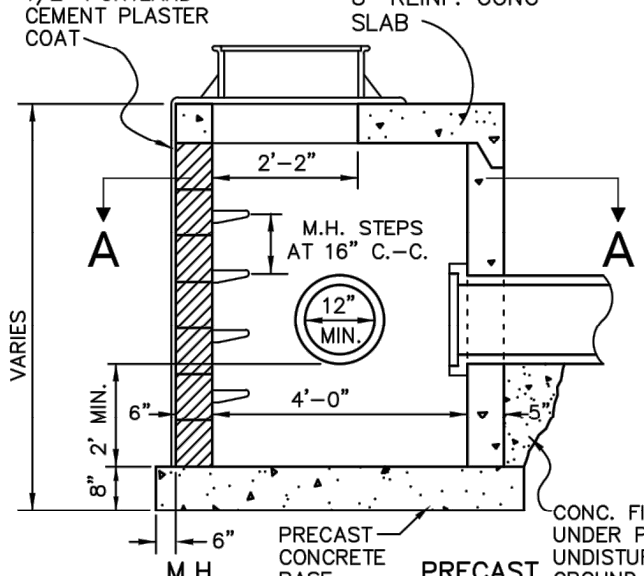
SECTION A-A

SECTION A-A

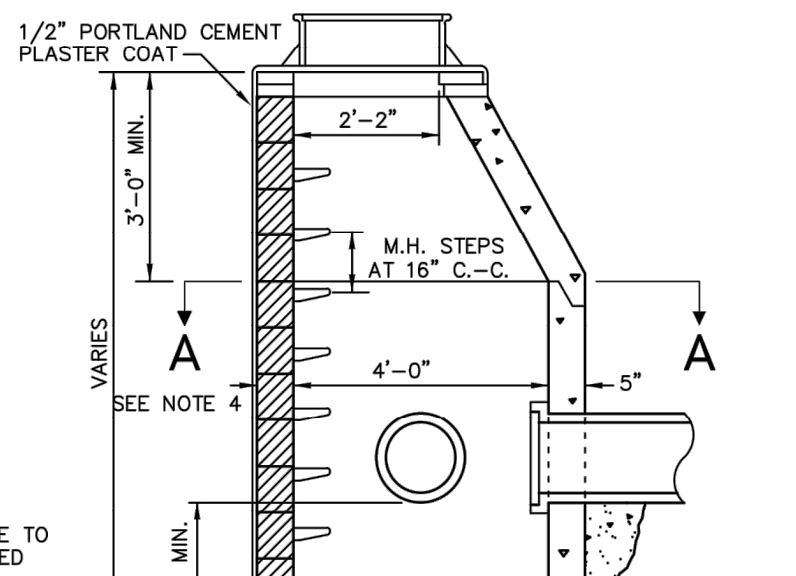
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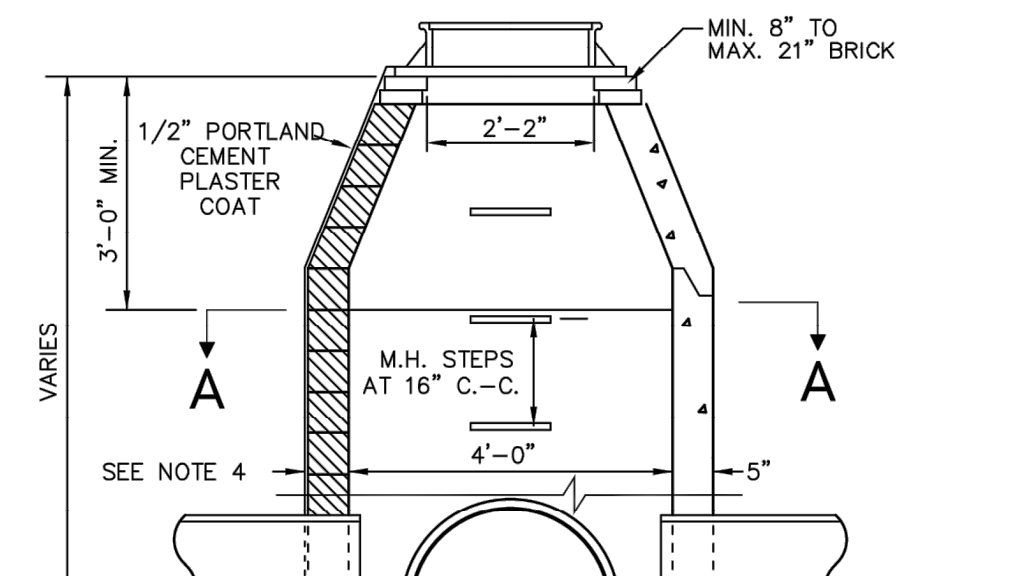
SECTION B-B  
24" INLET



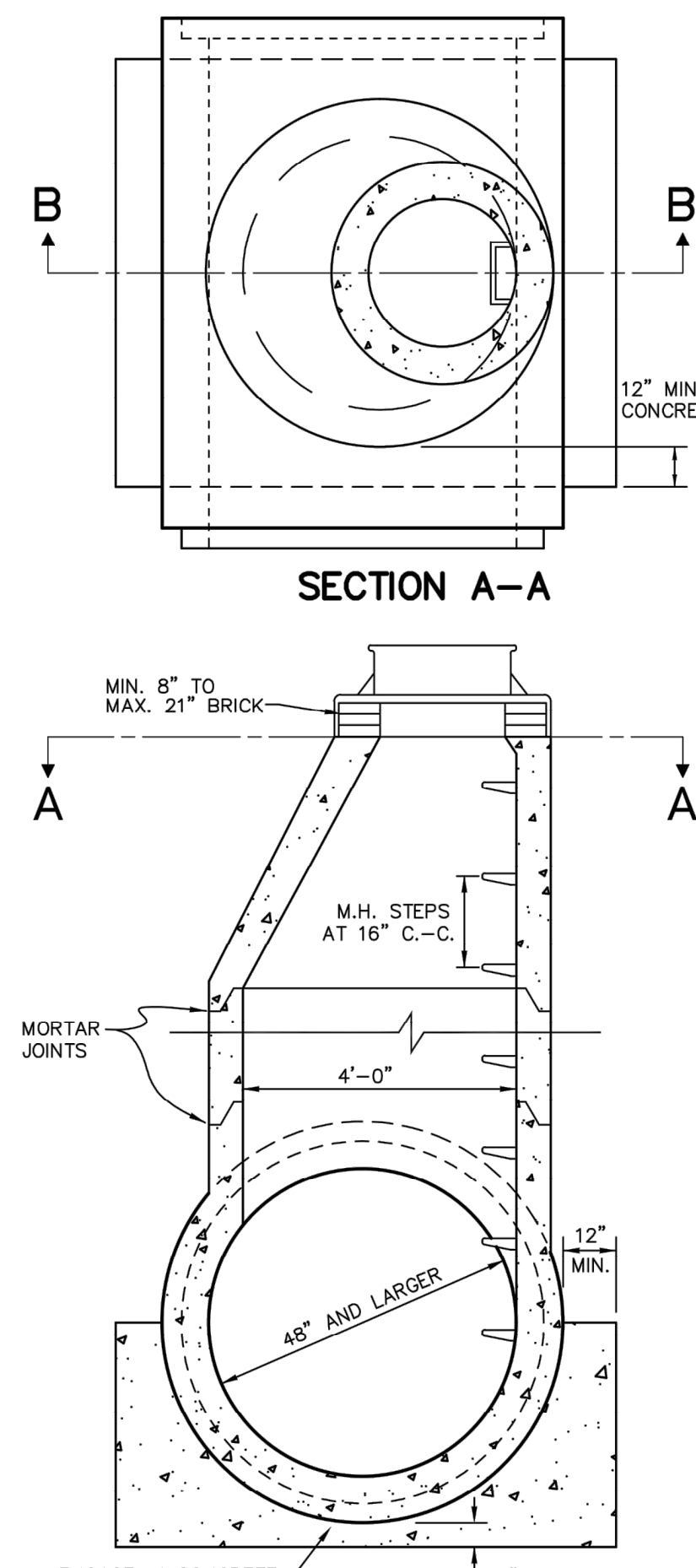
SECTION B-B  
STRUCTURE WITH  
SLAB COVER  
(CATCH BASIN SHOWN)



SECTION B-B  
STANDARD CATCH BASIN

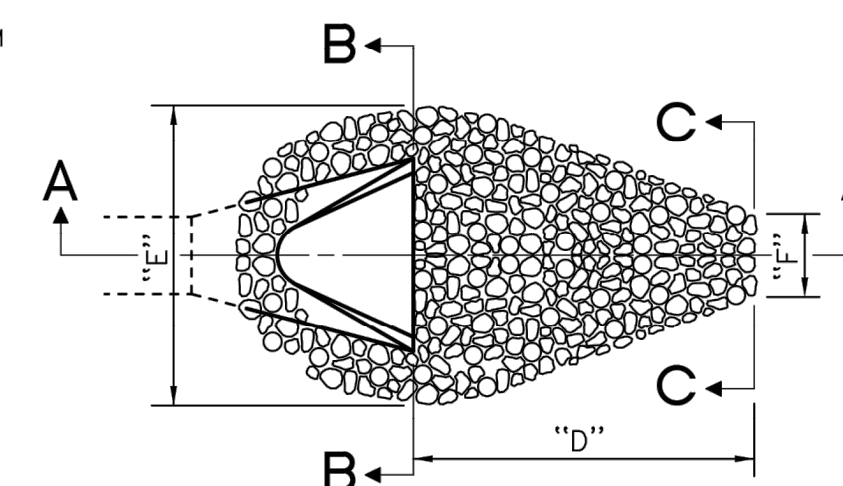


SECTION B-B  
STANDARD STORM MANHOLE

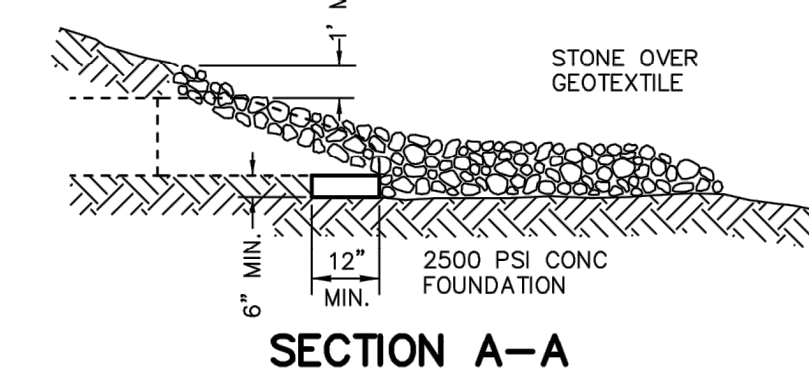


SECTION B-B  
STANDARD PRECAST CONCRETE  
MANHOLE TEE

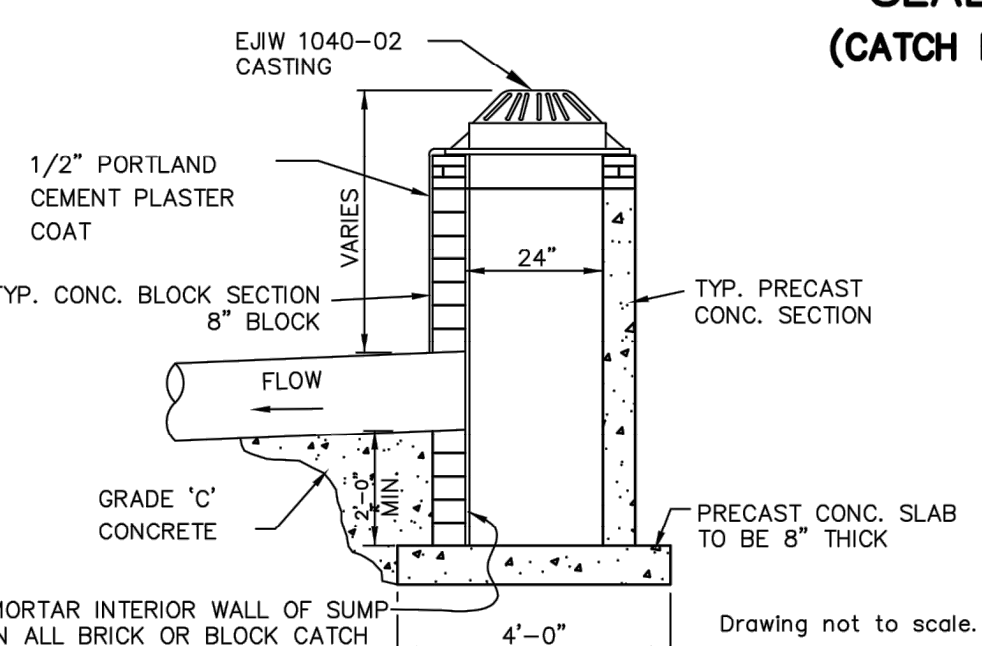
| PIPE DIA. | "D"    | "E"    | "F"   | S.Y. |
|-----------|--------|--------|-------|------|
| 12"       | 5'-0"  | 6'-6"  | 3'-0" | 4    |
| 15"       | 5'-0"  | 7'-0"  | 3'-0" | 4    |
| 18"       | 5'-0"  | 7'-6"  | 3'-6" | 4    |
| 21"       | 5'-6"  | 8'-0"  | 4'-0" | 5    |
| 24"       | 6'-0"  | 8'-6"  | 4'-6" | 6    |
| 27"       | 6'-6"  | 9'-0"  | 5'-0" | 7    |
| 30"       | 7'-0"  | 9'-6"  | 5'-6" | 8    |
| 33"       | 7'-6"  | 10'-3" | 5'-6" | 9    |
| 36"       | 8'-0"  | 10'-9" | 6'-0" | 10   |
| 42"       | 9'-0"  | 11'-9" | 6'-6" | 12   |
| 48"       | 10'-0" | 13'-0" | 7'-0" | 14   |



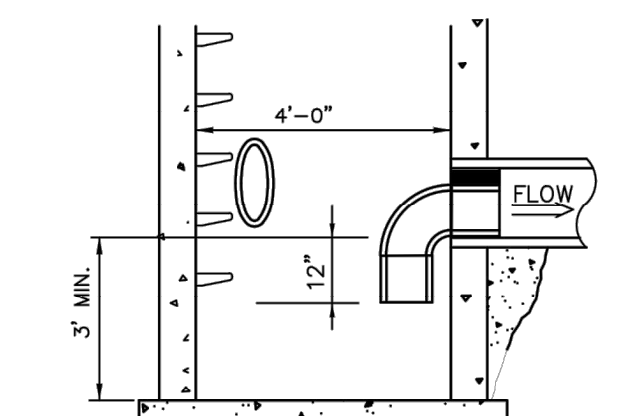
PLAN VIEW



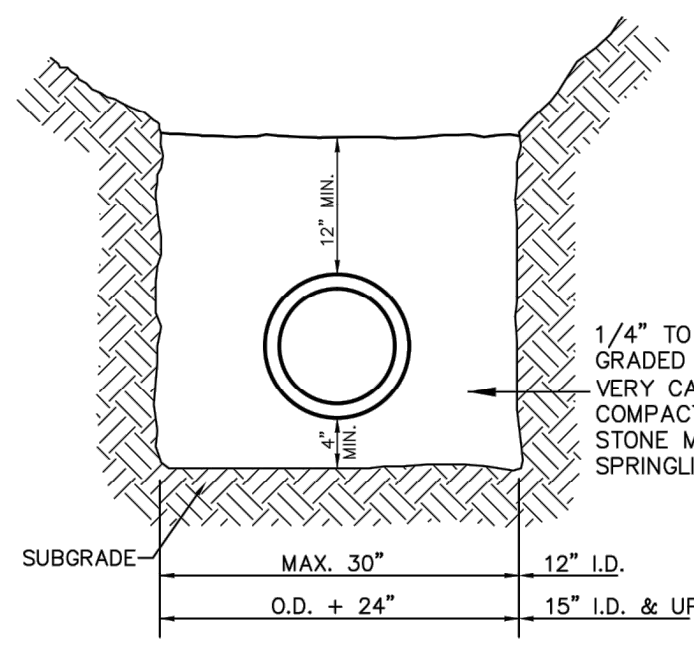
SECTION B-B SECTION C-C  
PLAIN STONE RIP-RAP



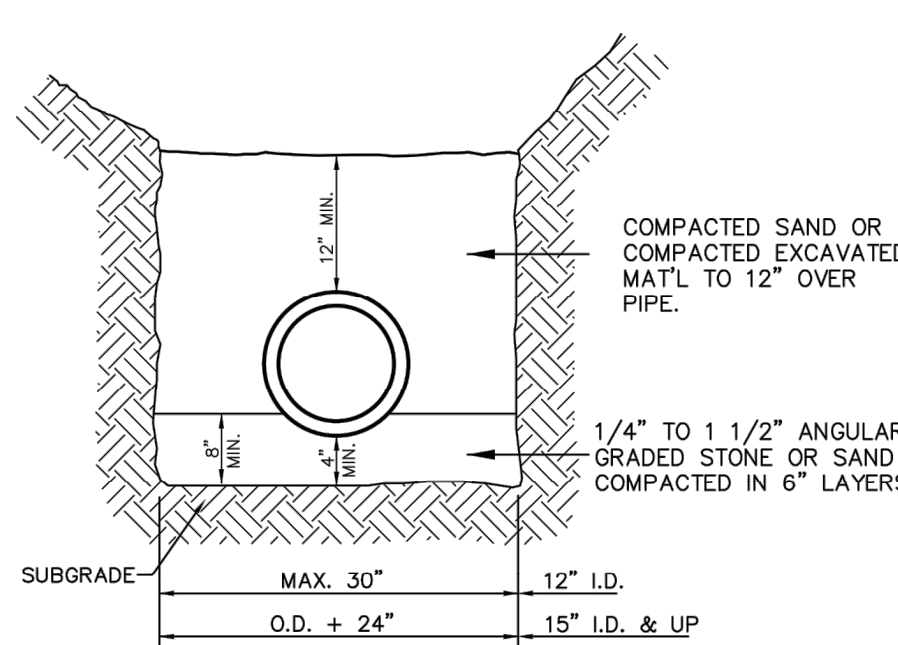
STANDARD REAR YARD CATCH BASIN



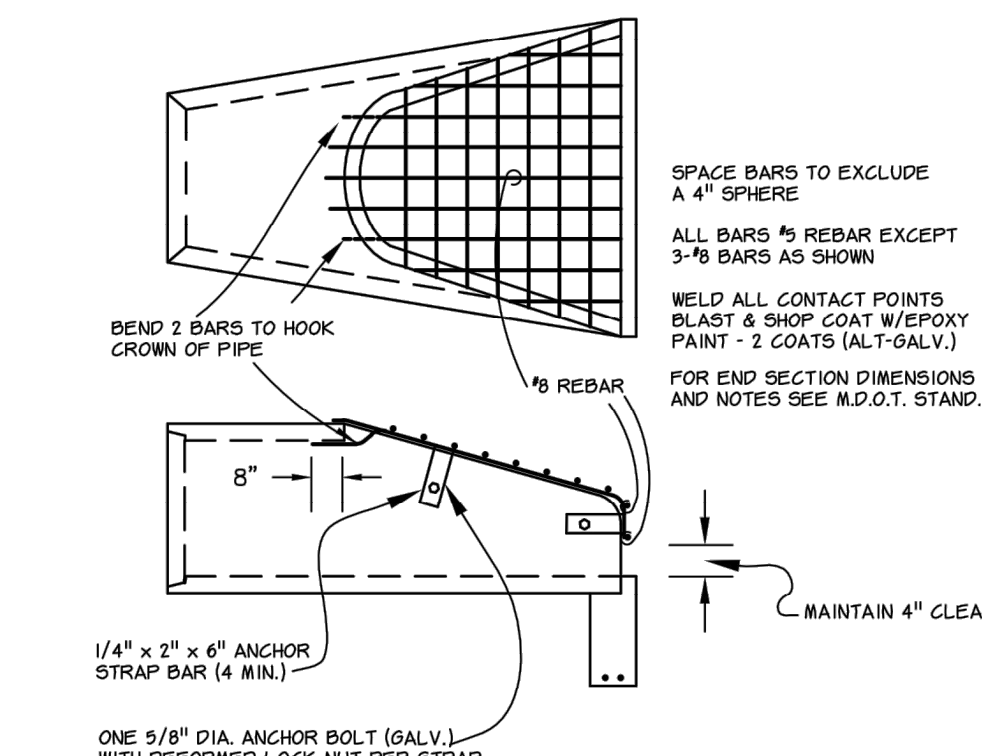
TRAPPED CATCH BASIN



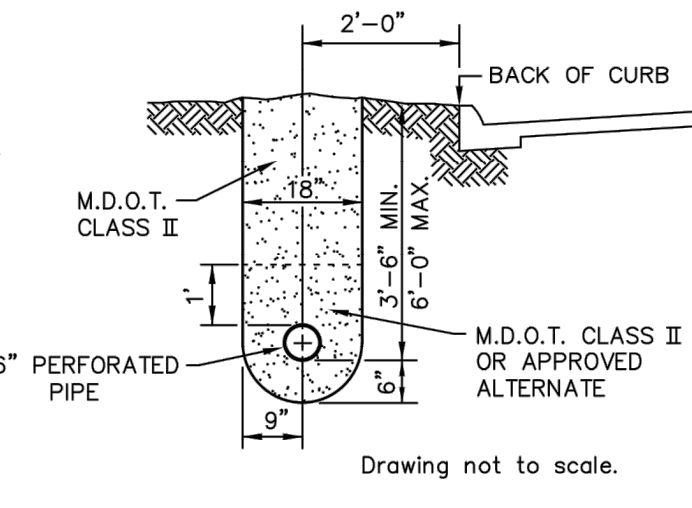
PIPE BEDDING  
FOR PLASTIC PIPE



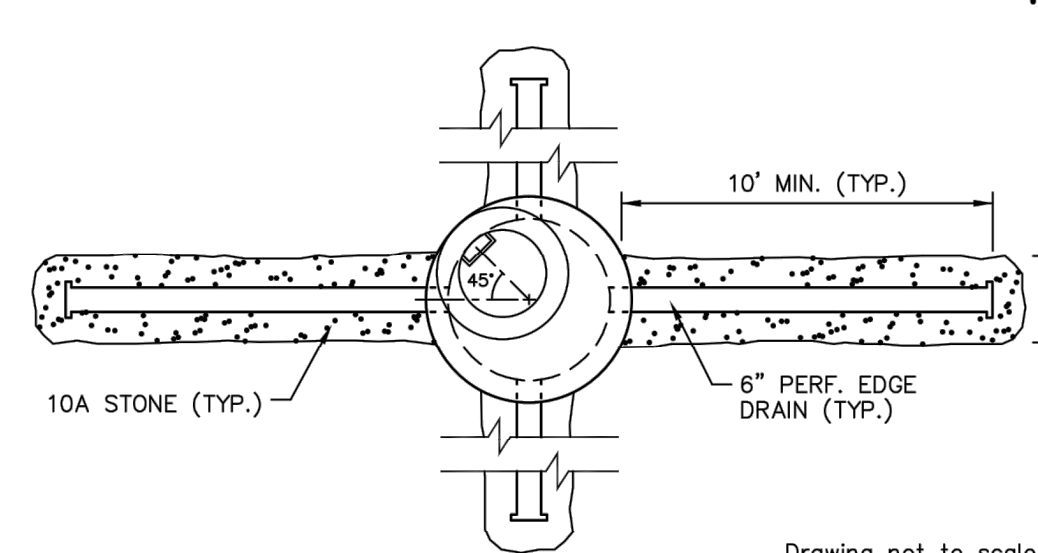
CLASS "B" BEDDING  
FOR SEWER PIPE  
LESS THAN 48"



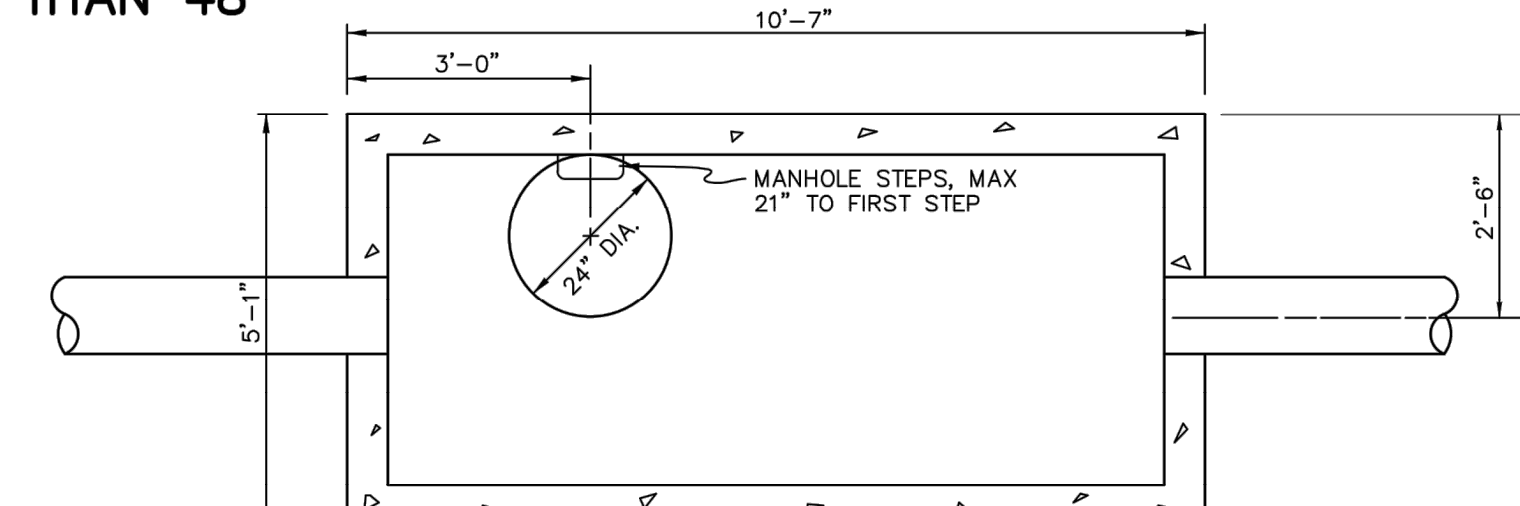
BAR SCREEN DETAIL



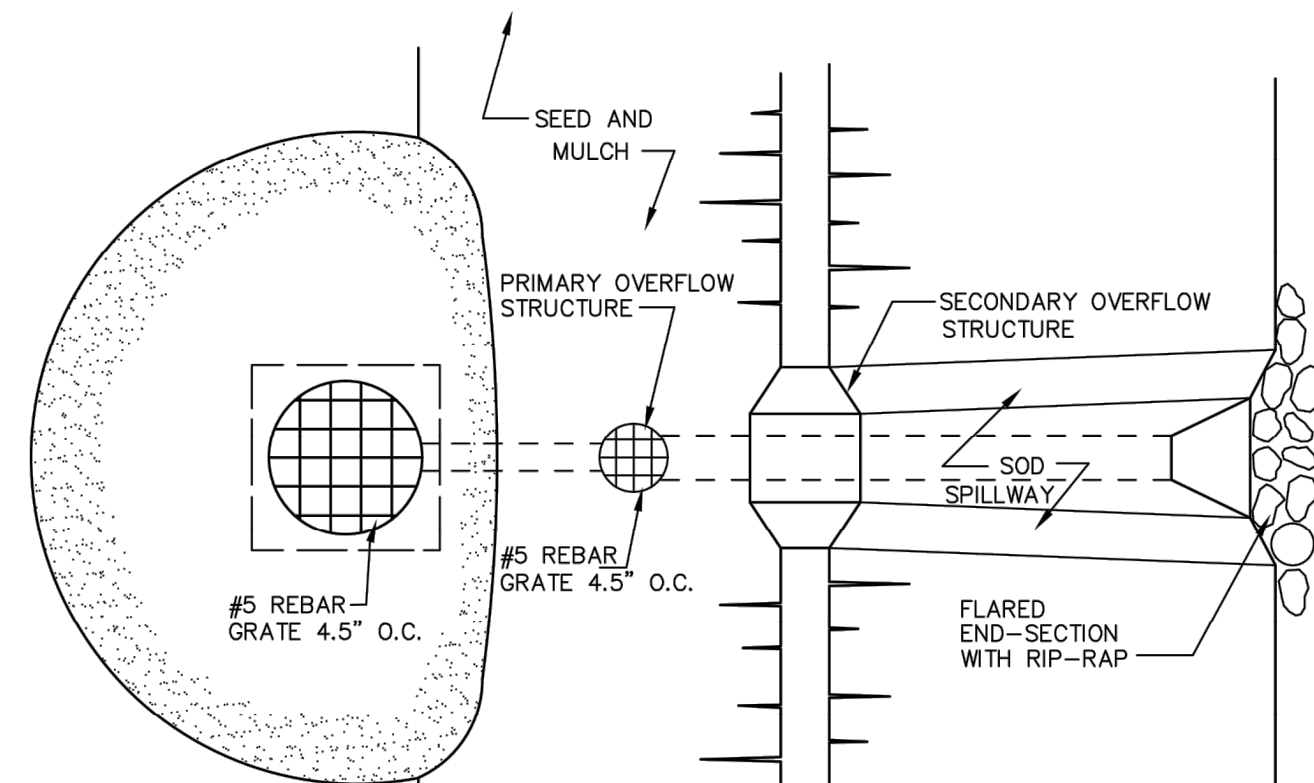
EDGE DRAIN DETAIL



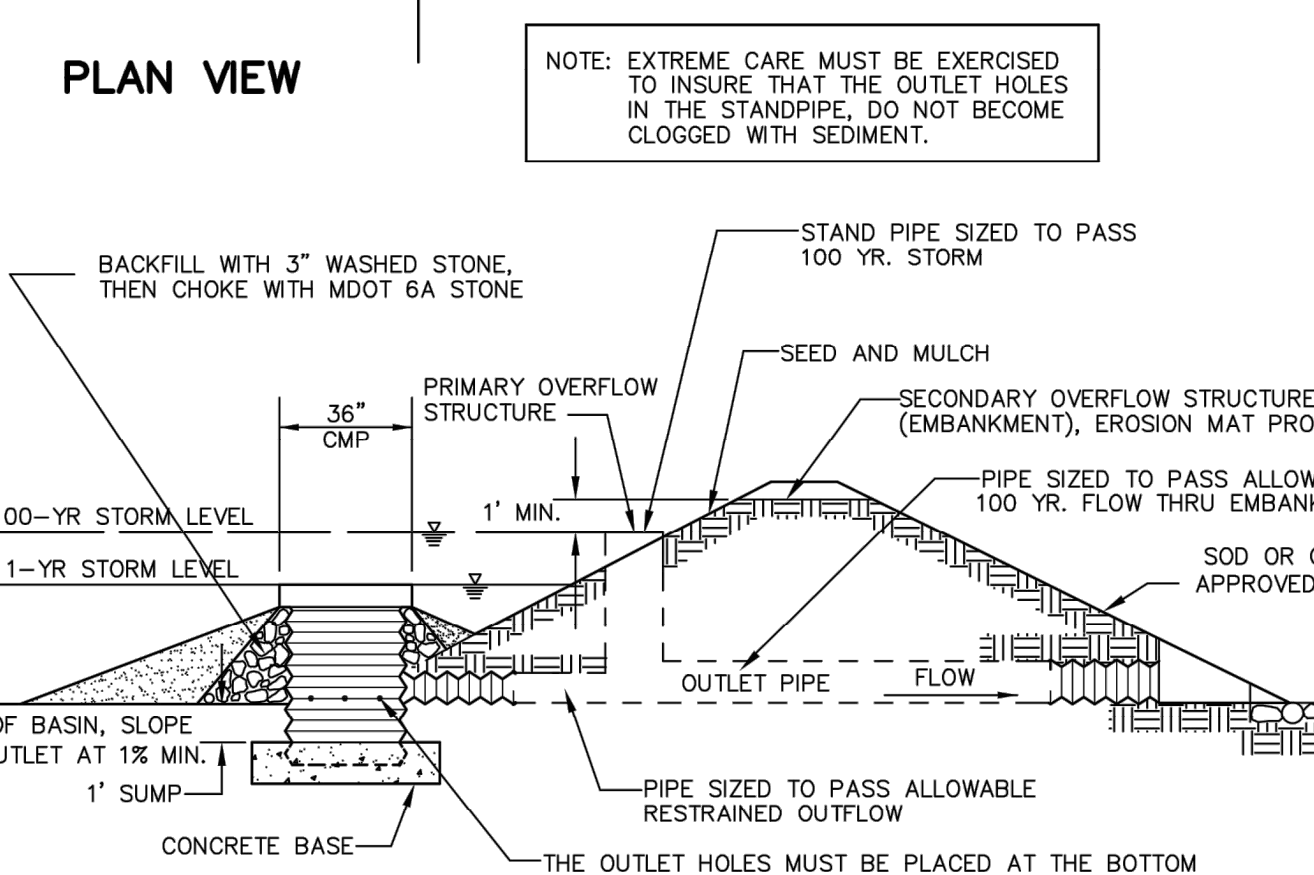
DETAIL  
STANDARD LEACHING BASIN



1000 GALLON LEACHING/SETTLING BASIN

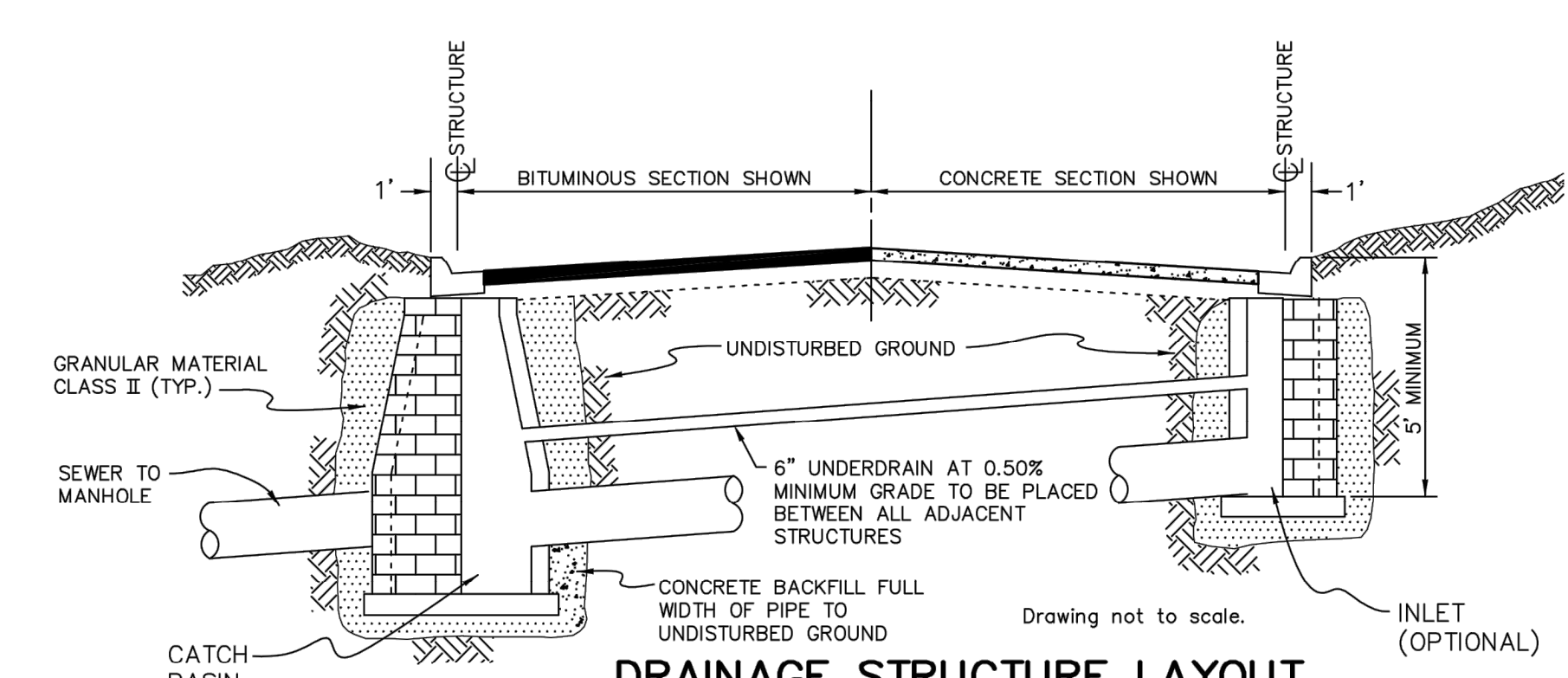


PLAN VIEW

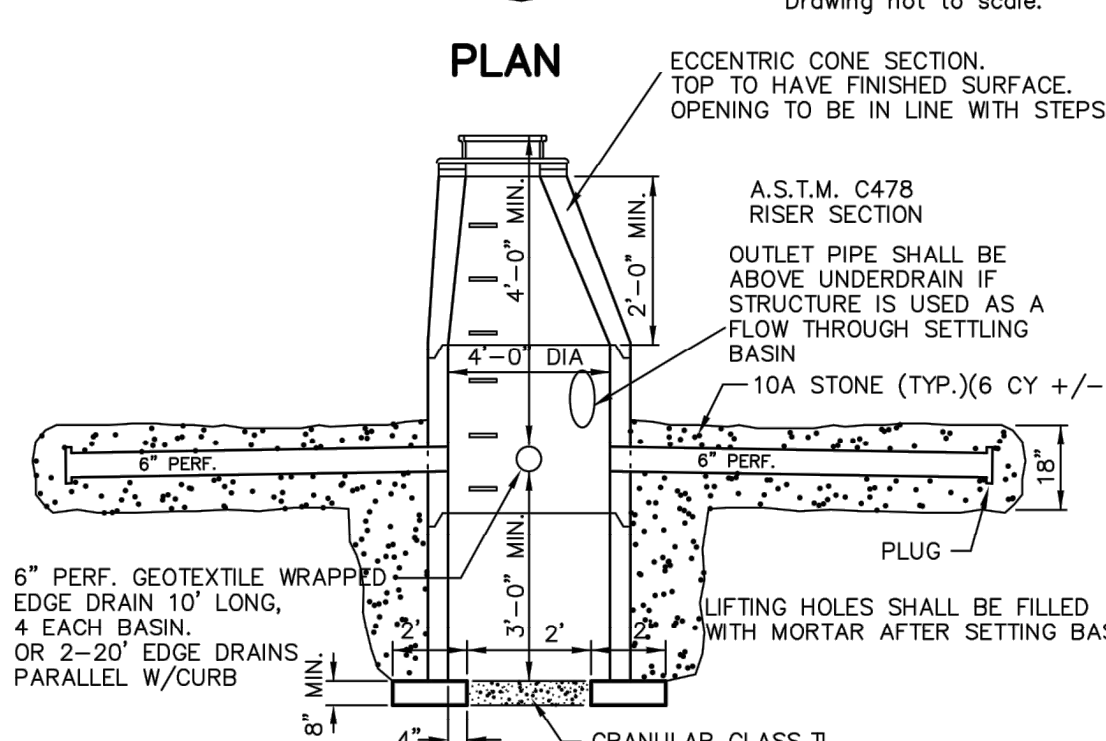


PROFILE VIEW

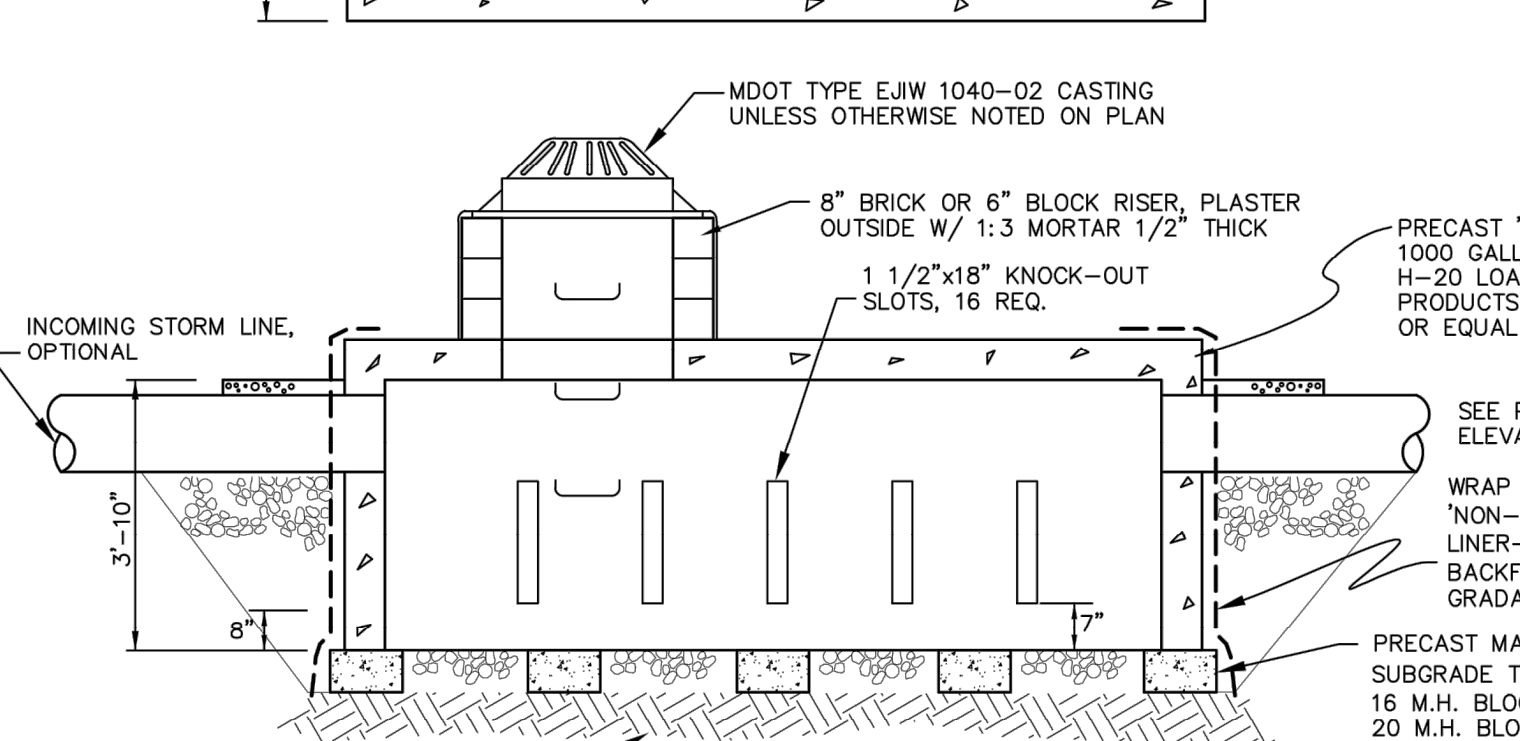
SO-2 DETENTION BASIN OUTLET FILTER (CMP)  
(SEE ODD STANDARD DETAILS FOR SEDIMENT BASIN OR FOREBAY OUTLET STRUCTURE)



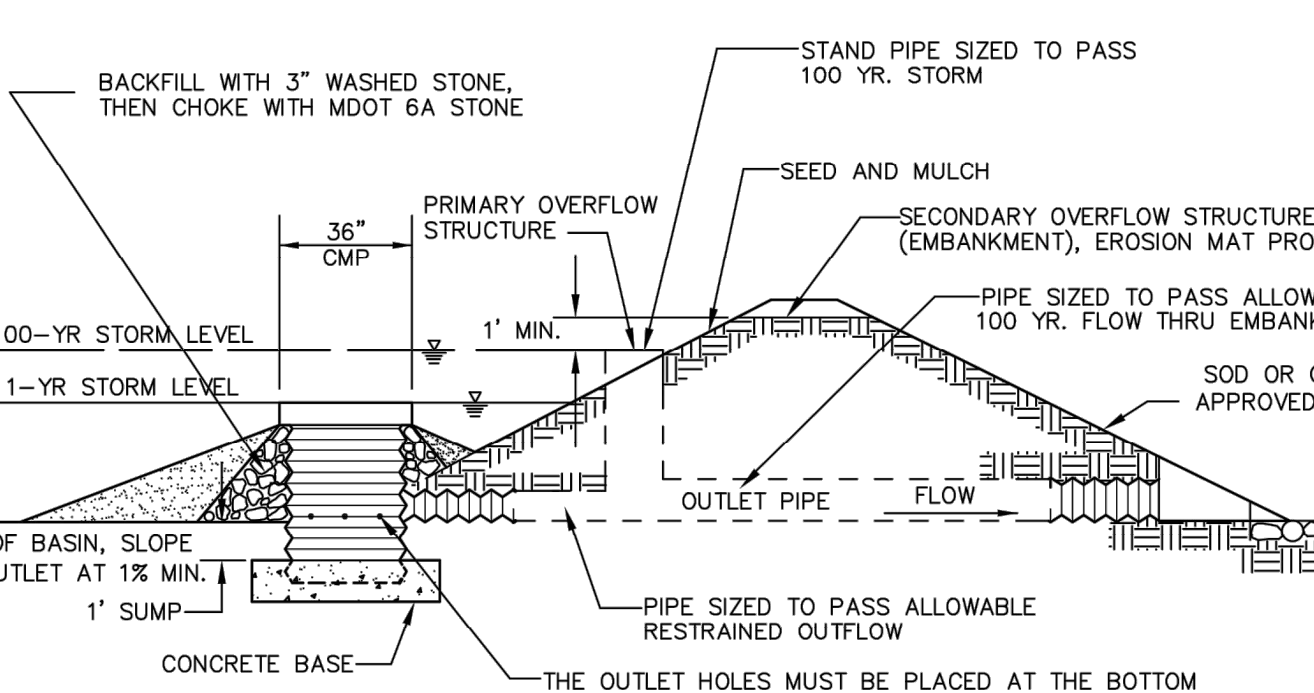
DRAINAGE STRUCTURE LAYOUT



DETAIL  
STANDARD LEACHING BASIN



1000 GALLON LEACHING/SETTLING BASIN



PROFILE VIEW

SO-2 DETENTION BASIN OUTLET FILTER (CMP)  
(SEE ODD STANDARD DETAILS FOR SEDIMENT BASIN OR FOREBAY OUTLET STRUCTURE)

# STORM SEWER NOTES

1. PRECAST CONC. RISERS SHALL MEET A.S.T.M. C478
2. DIAMETER OF CONC. BASE: I.D. + 2(WALL) + 8"
3. MANHOLE STEP SPACING SHALL MEET MOSHA REQUIREMENTS. NO MORE THAN 21" FROM RIM TO FIRST STEP. MAX. 16" O.C. STEPS SHALL BE CAST POLYPROPYLENE REINFORCED WITH A 1/2" STEEL ROD.
4. POLY THICKNESS OF BLOCK STRUCTURES SHALL BE:
 

| DEPTH    | THICKNESS |
|----------|-----------|
| 0-8'     | 8"        |
| 8-15'    | 12"       |
| OVER 15' | 12"       |
5. MINIMUM I.D. OF STRUCTURE FOR: 36" to 42" = 5'-0", 48" to 54" = 6'-0". LARGER DIAMETER STRUCTURES MAY BE REQUIRED DEPENDING ON PIPING CONFIGURATION.
6. ALL LIFTING HOLES AND VOIDS IN INTERIOR JOINTS SHALL BE FILLED BY MORTAR.
7. THE FINGER DRAIN DETAIL SHALL BE USED AT ALL LOW POINT CATCH BASINS IN PAVEMENT AREAS. THE DETAIL MAY BE OMITTED WITH THE APPROVAL OF THE TOWNSHIP ENGINEER IN AREAS WITH VERY POROUS SOILS AND NO GROUNDWATER PROBLEMS.
8. PRECAST ONE PIECE BASES AND RISERS ARE ACCEPTABLE FOR INLETS, CATCH BASINS AND MANHOLES
9. FRAMES & COVERS WITH INLET CAPACITY (1.0 CFS/90 SQ IN) -REAR YARD AND DITCH INLETS: (EJ.W. 1040-02) 2.1 CFS\* -MANHOLES: M.D.O.T. "A" (EJ.W. 1060) -CURB AND GUTTER INLETS: M.D.O.T. "K" (EJ.W. 7045) 1.8 CFS\* -MOUNTABLE CURB & GUTTER: (EJ.W. 7065) 2.2 CFS\* \*MAY VARY DUE TO MANUFACTURER CHANGES
10. CONTACT THE TOWNSHIP ENGINEER 48 HOURS PRIOR TO CONSTRUCTION TO SCHEDULE INSPECTION. FULL TIME INSPECTION WILL BE REQUIRED FOR ALL UNDERGROUND STORM SEWER CONSTRUCTION. PHONE (248) 334-9901
11. THE CONTRACTOR SHALL CONTACT MISS DIG 72 HOURS BEFORE CONSTRUCTION AT (800) 482-7171 TO LOCATE EXISTING UNDERGROUND UTILITIES.
12. PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL HAVE IN HIS POSSESSION A CURRENT SOIL EROSION CONTROL PERMIT AS ISSUED BY WHITE LAKE TOWNSHIP.
13. A 2' DEEP SUMP SHALL BE USED IN ANY STRUCTURE SUBJECT TO A WATER DROP GREATER THAN 2.0' FROM AN INLET PIPE.
14. ALLOWABLE STORM SEWER PIPE TYPES: -12" AND UP: RCP ASTM C-76 MIN. CLASS 3, MIN. CLASS 4 UNDER TRAFFIC AREAS, RUBBER JOINT -6" TO 15": SCH 40 PVC OR SDR 23.5 PVC WITH RUBBER OR GLUE JOINT -6" TO 48": SMOOTH BORE CORRUGATED HIGH DENSITY POLYETHYLENE WITH NEOPRENE LINED JOINTS OR BETTER
15. THE MINIMUM PIPE SIZE IN PUBLIC RIGHT-OF-WAY OR EASEMENTS AND FOR PIPES CARRYING OFF-SITE STORM WATER SHALL BE 12"
16. ALL PIPE ENDS NOT WITHIN A STRUCTURE SHALL HAVE A CONCRETE OR METAL FLARE END SECTION (FES) WITH A BAR SCREEN ON PIPES 18" AND LARGER EXCEPT THOSE WITHIN A SECURE FENCED AREA NEED NO BAR SCREEN.
17. ALL DRAINAGE STRUCTURES WITHIN THE ROAD SHALL BE SEALED WITH WRAPPED GEOTEXTILE PER ROC STANDARDS

DRAWN: CAD  
DESIGN: OA  
CHECKED: --

| REVISION | MARK | ADDENDUM/CHANGE ORDER | DATE     | MARK | ADDENDUM/CHANGE ORDER | DATE     | MARK | ADDENDUM/CHANGE ORDER | DATE     |
|----------|------|-----------------------|----------|------|-----------------------|----------|------|-----------------------|----------|
|          |      | FIRST ISSUE           | 08/16/95 |      | REVISE                | 10-03-02 |      | REVISE                | 06-01-07 |
|          |      | ADD SO-1              | 06-17-96 |      | REVISE                | 12-17-03 |      | UPDATED TITLE BLOCK   | 04/30/13 |
|          |      | NEW BAR GRATE         | 11-03-97 |      | SEC REFERENCE         | 05-17-05 |      |                       |          |

**Johnson&Anderson**

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3910 Lapeer Road  
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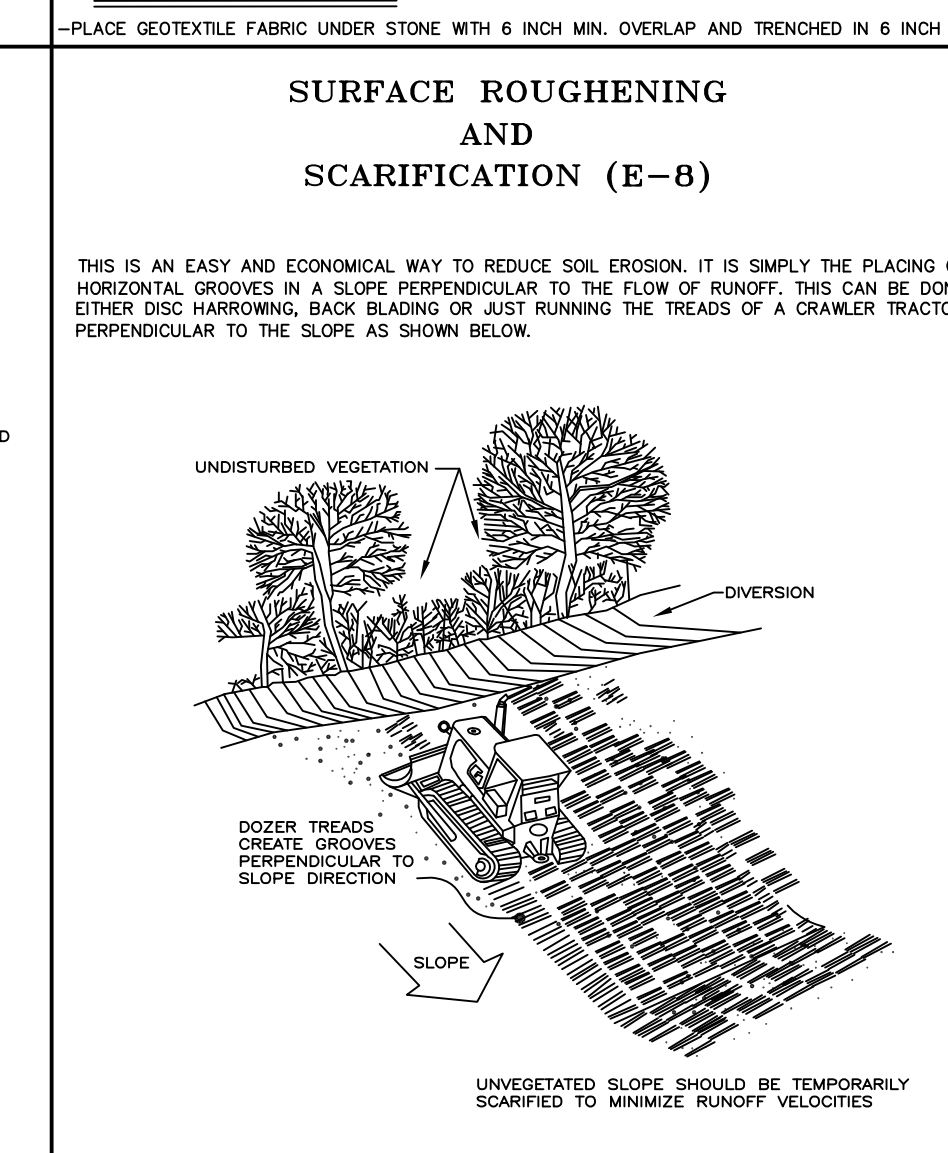
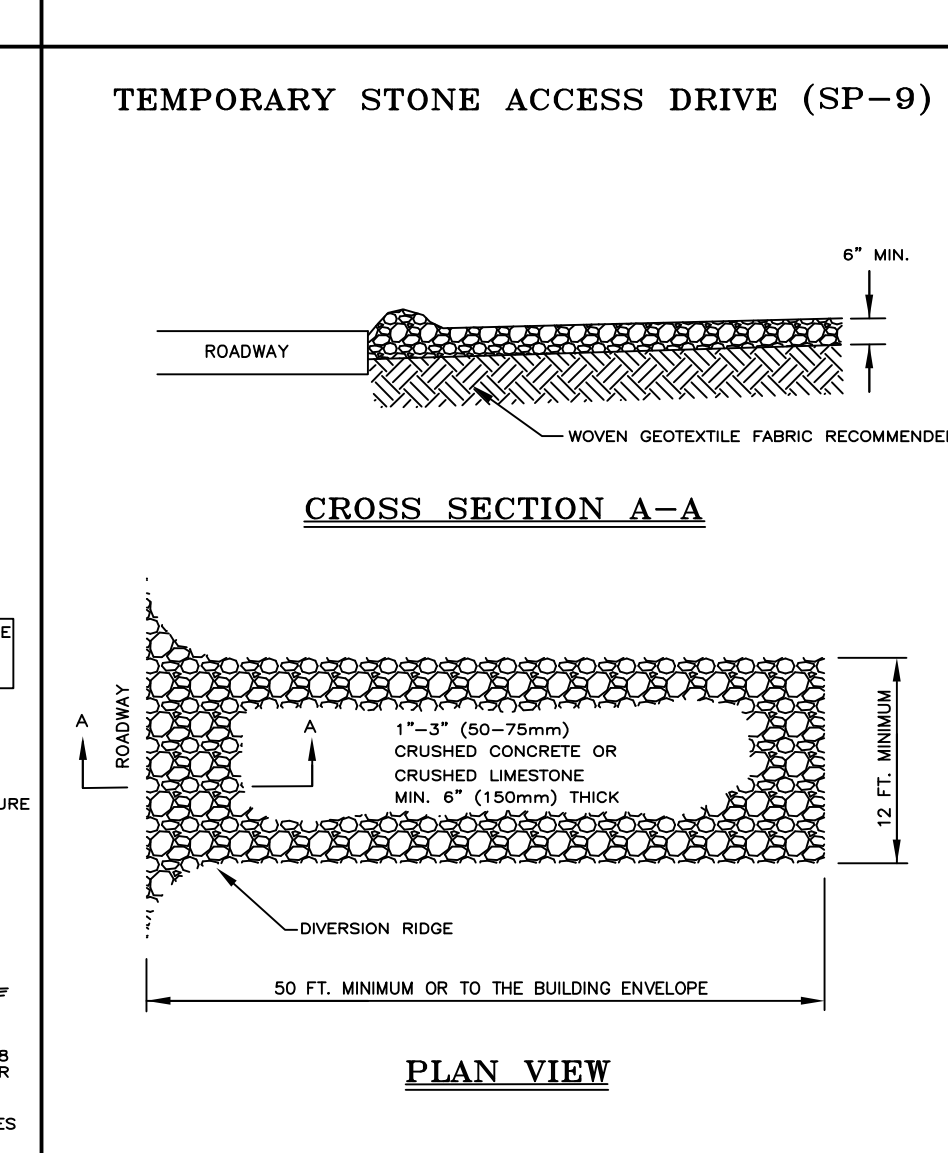
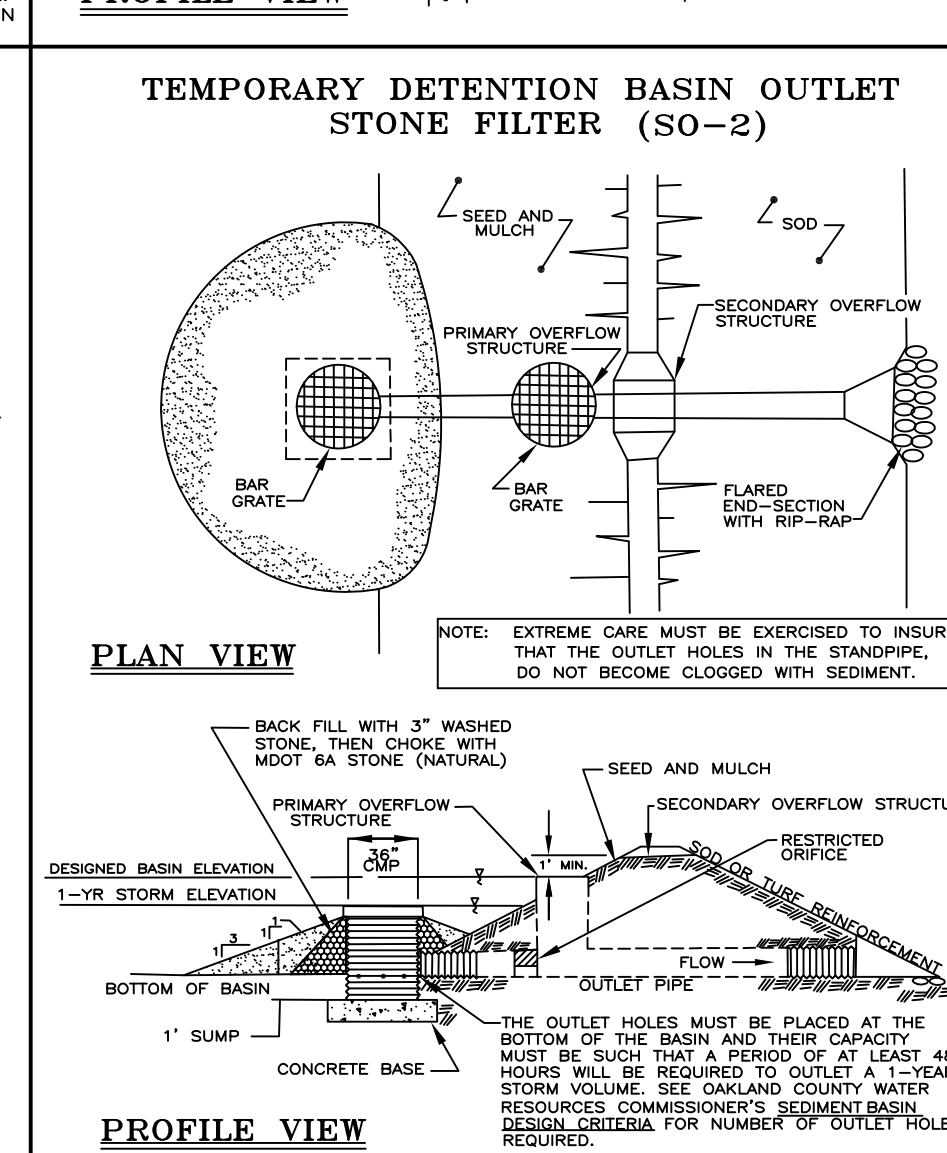
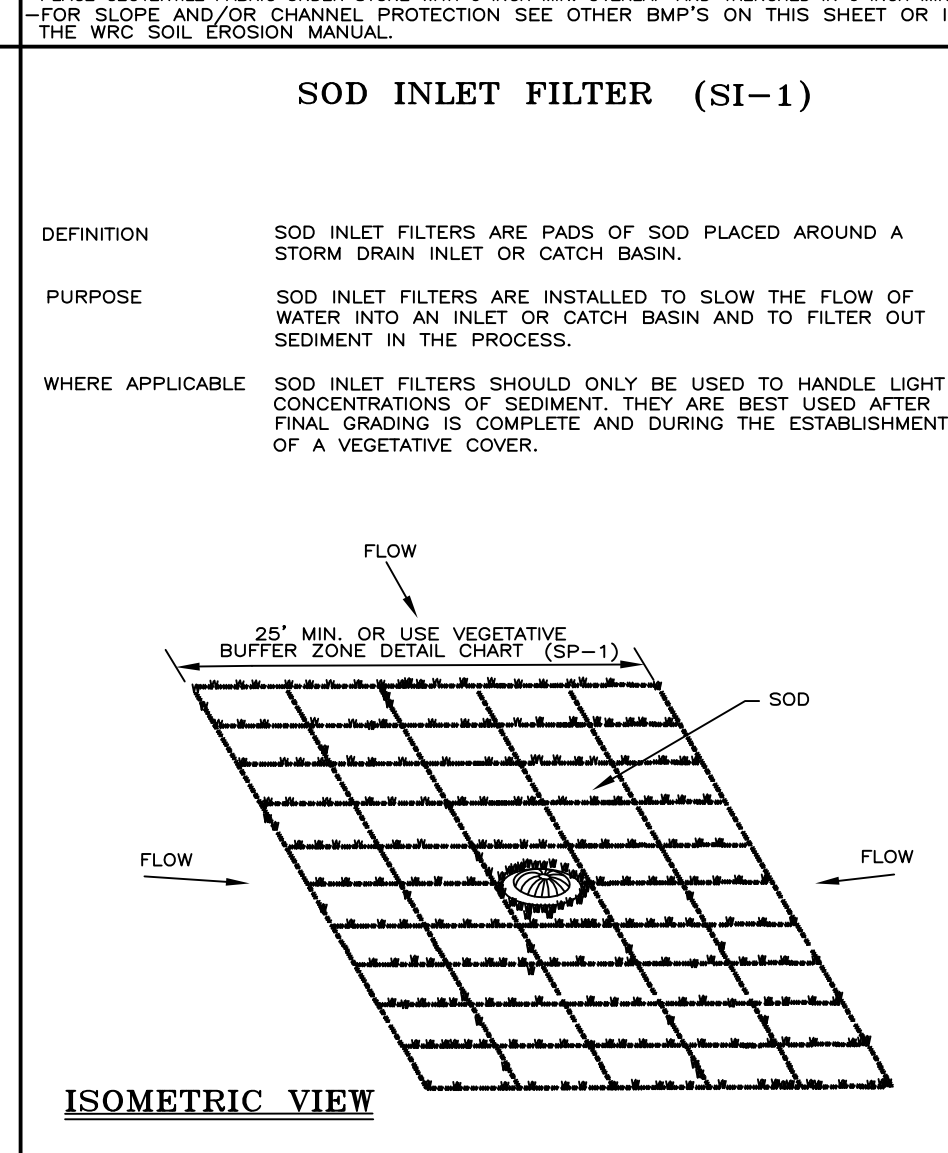
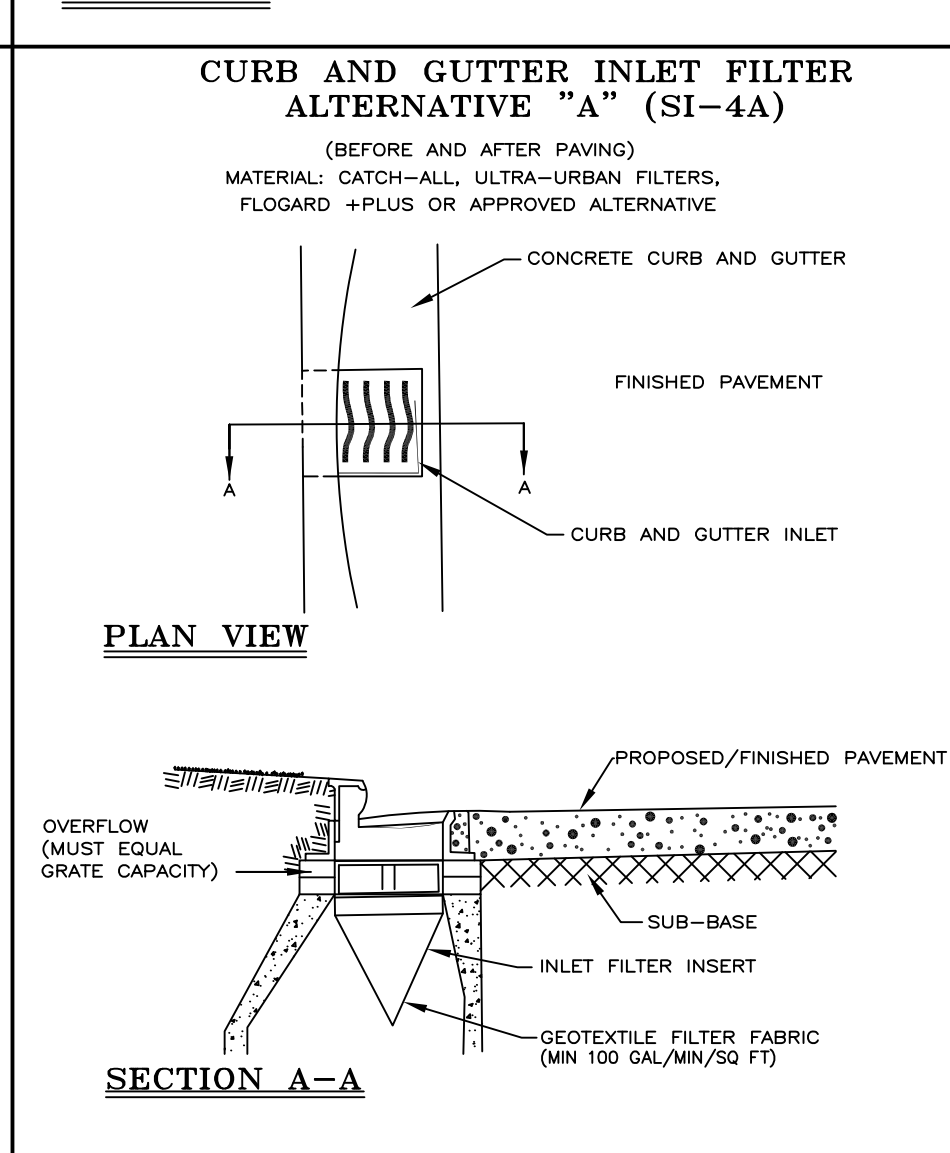
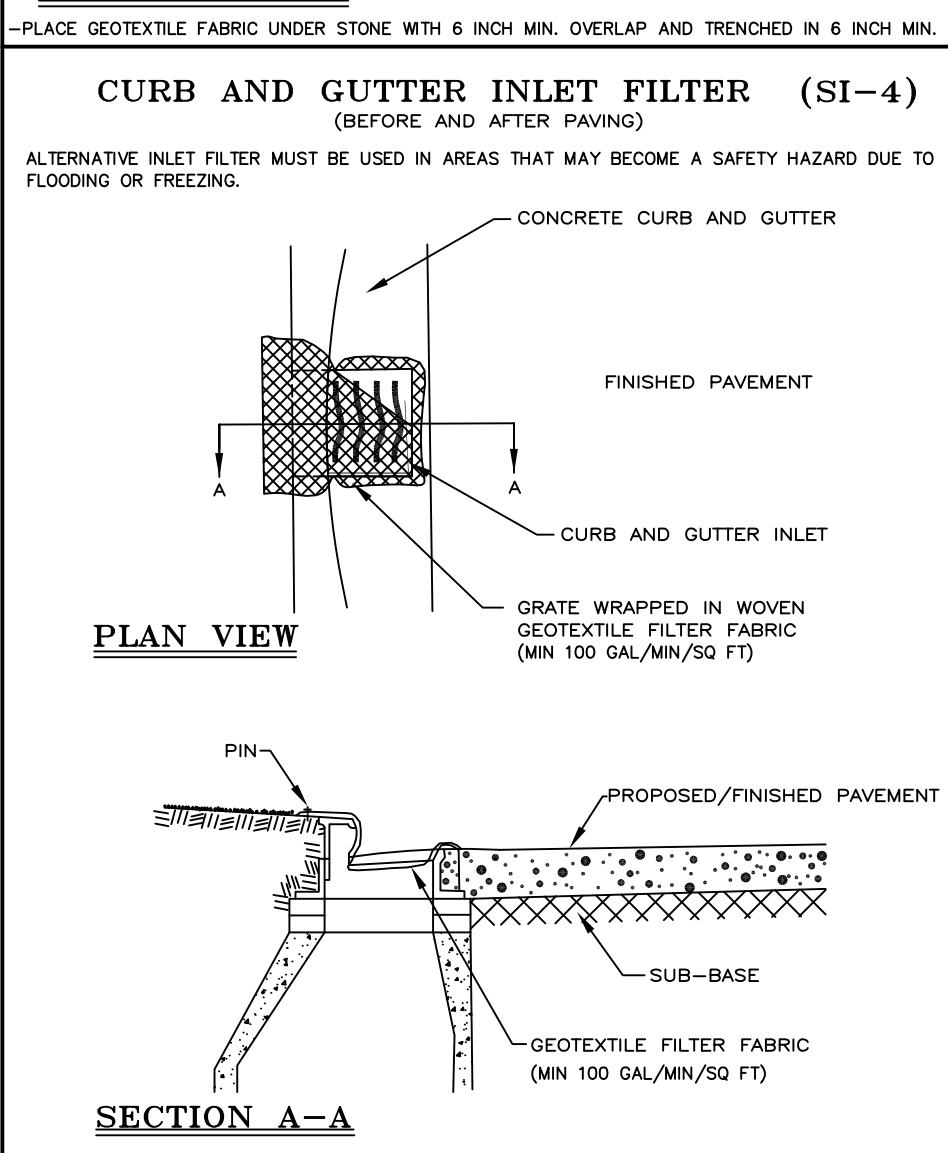
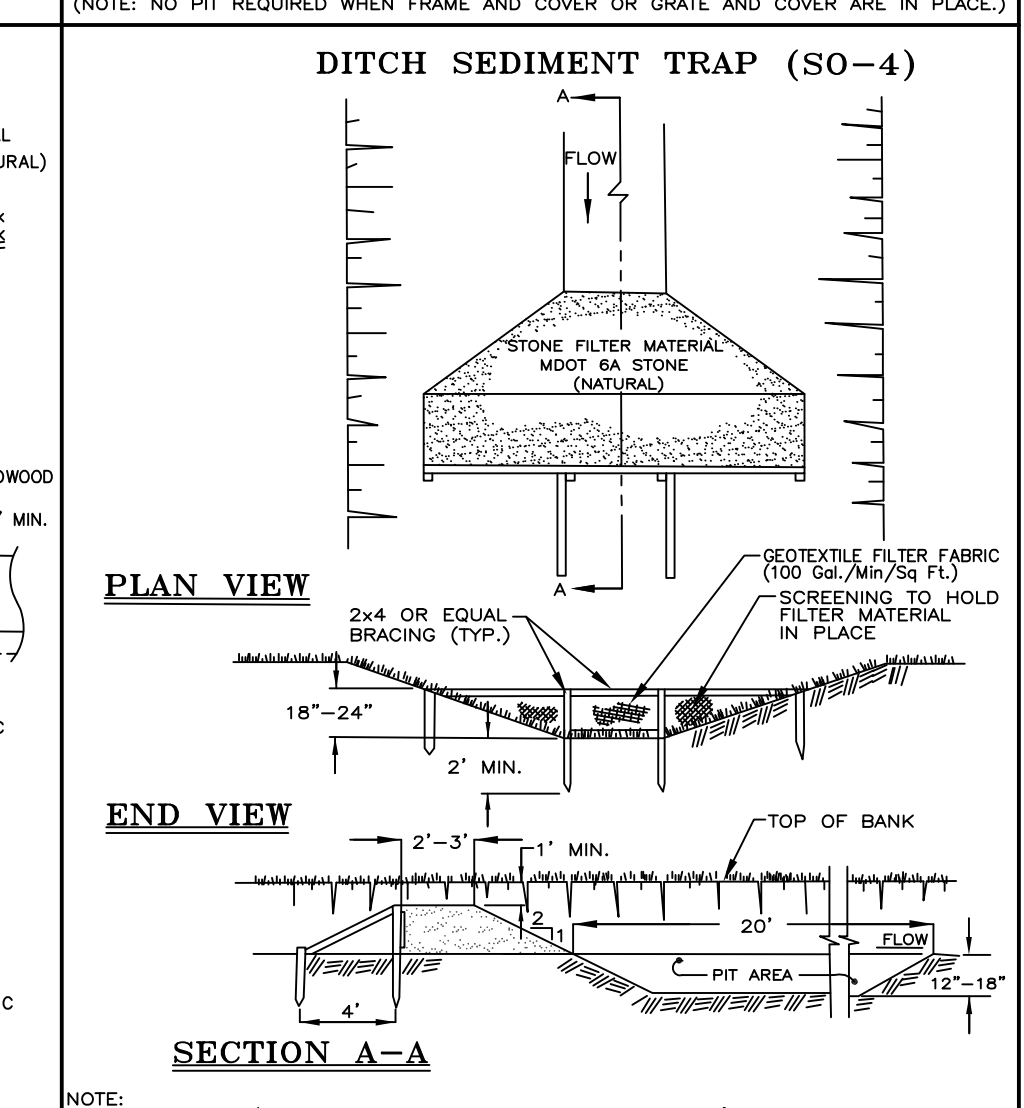
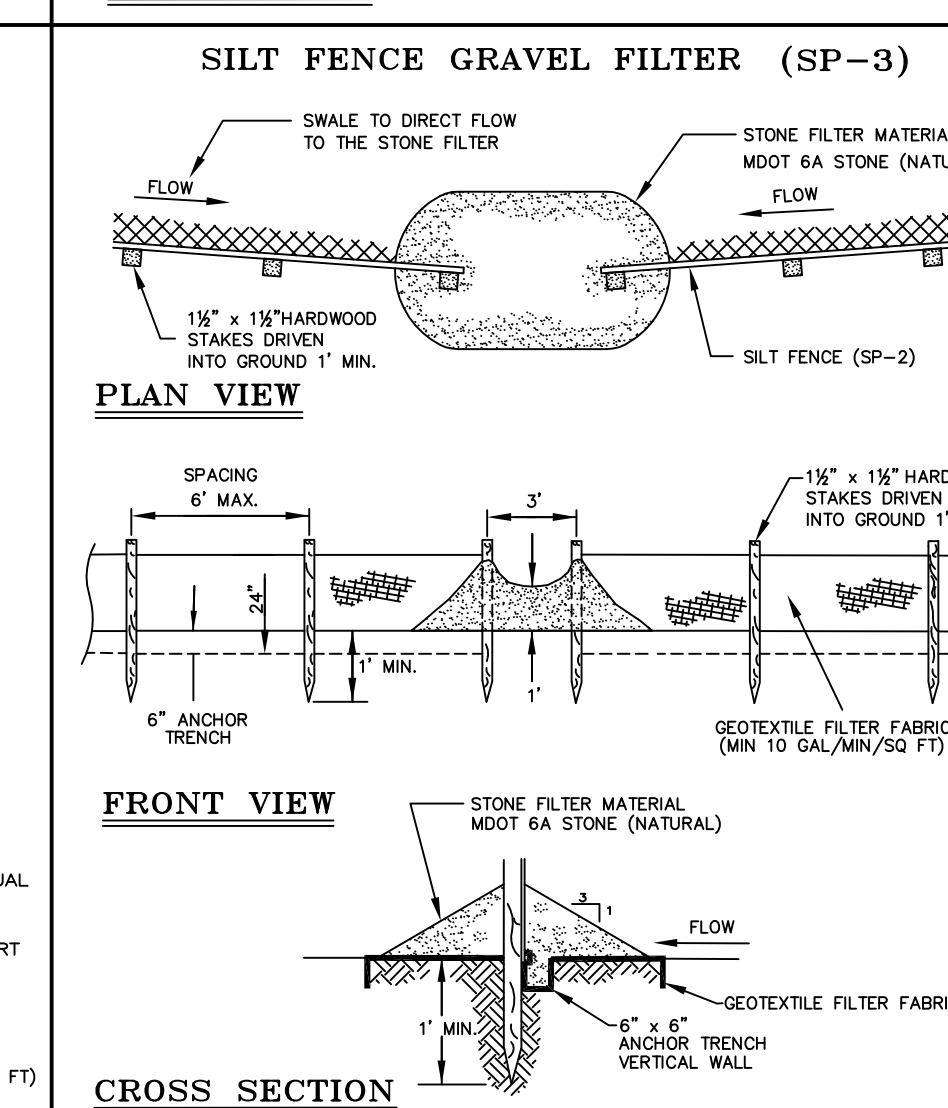
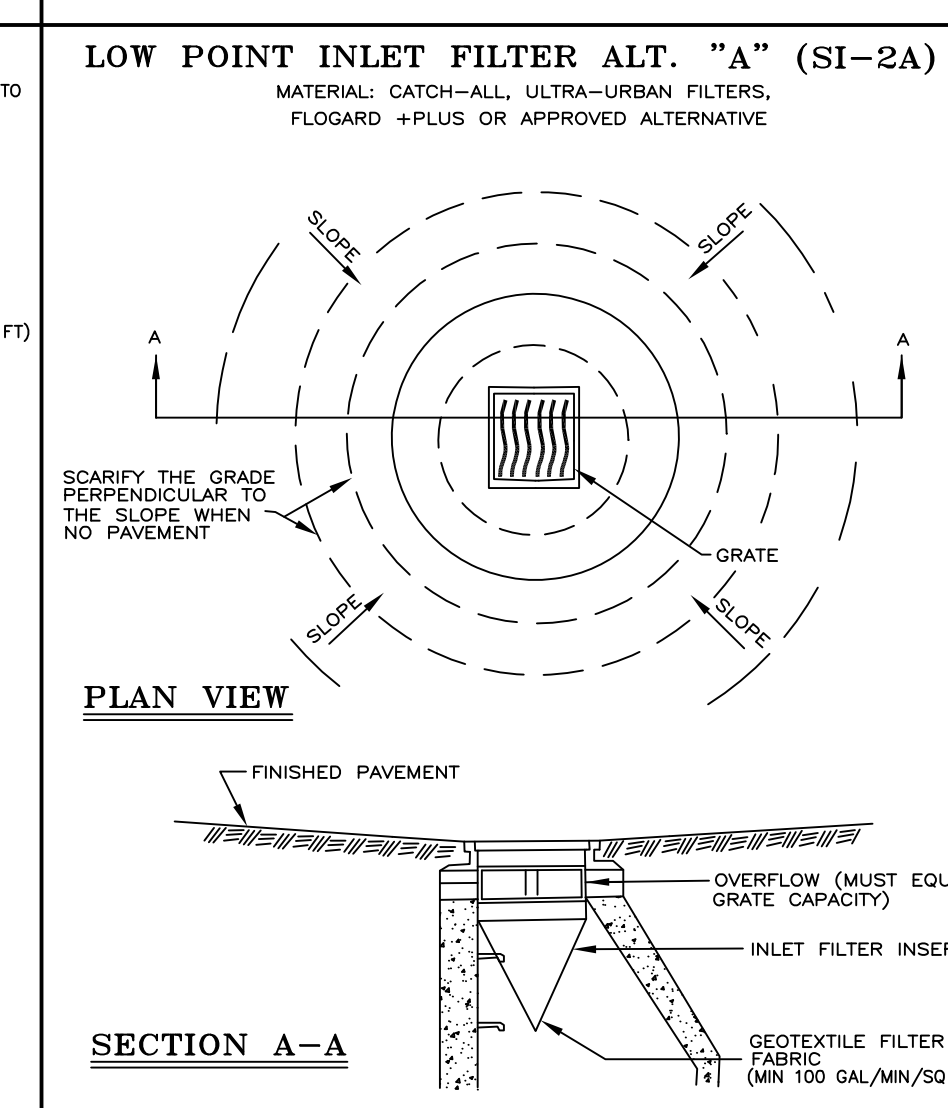
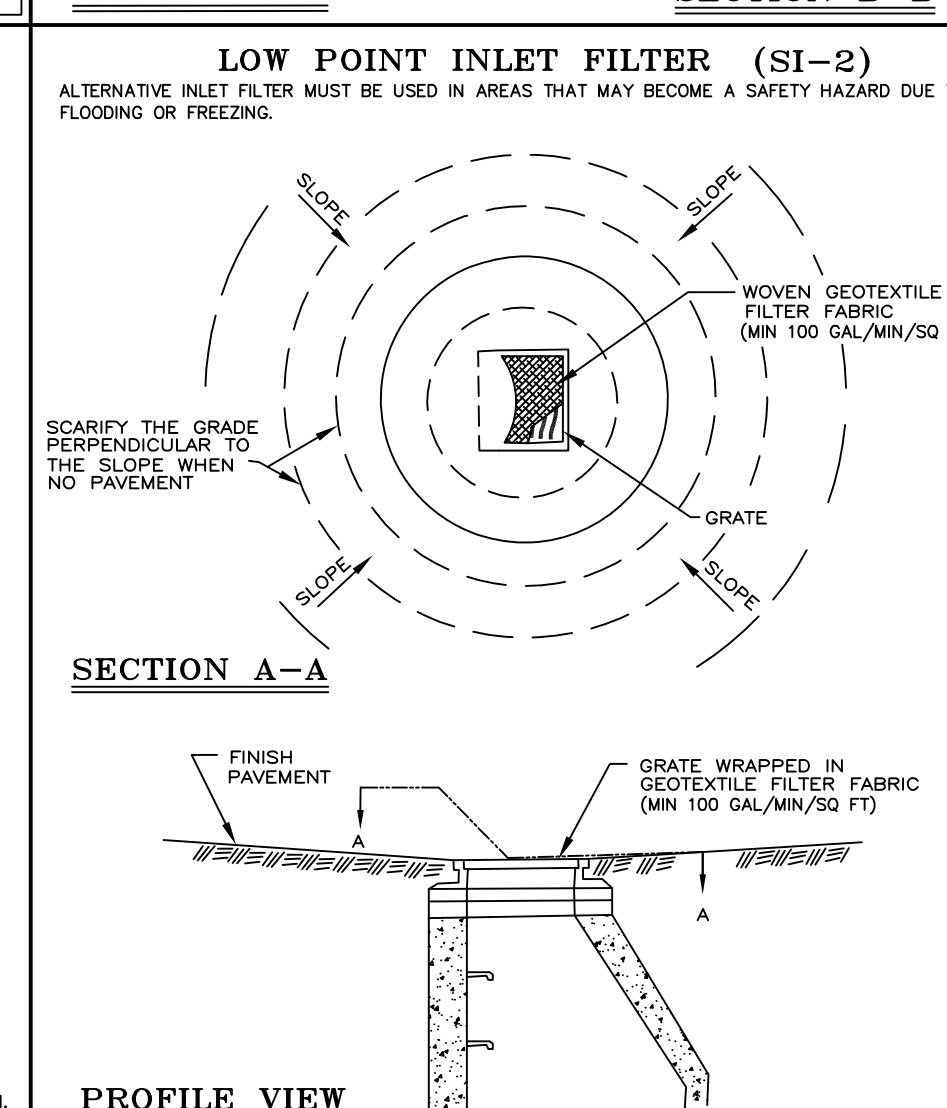
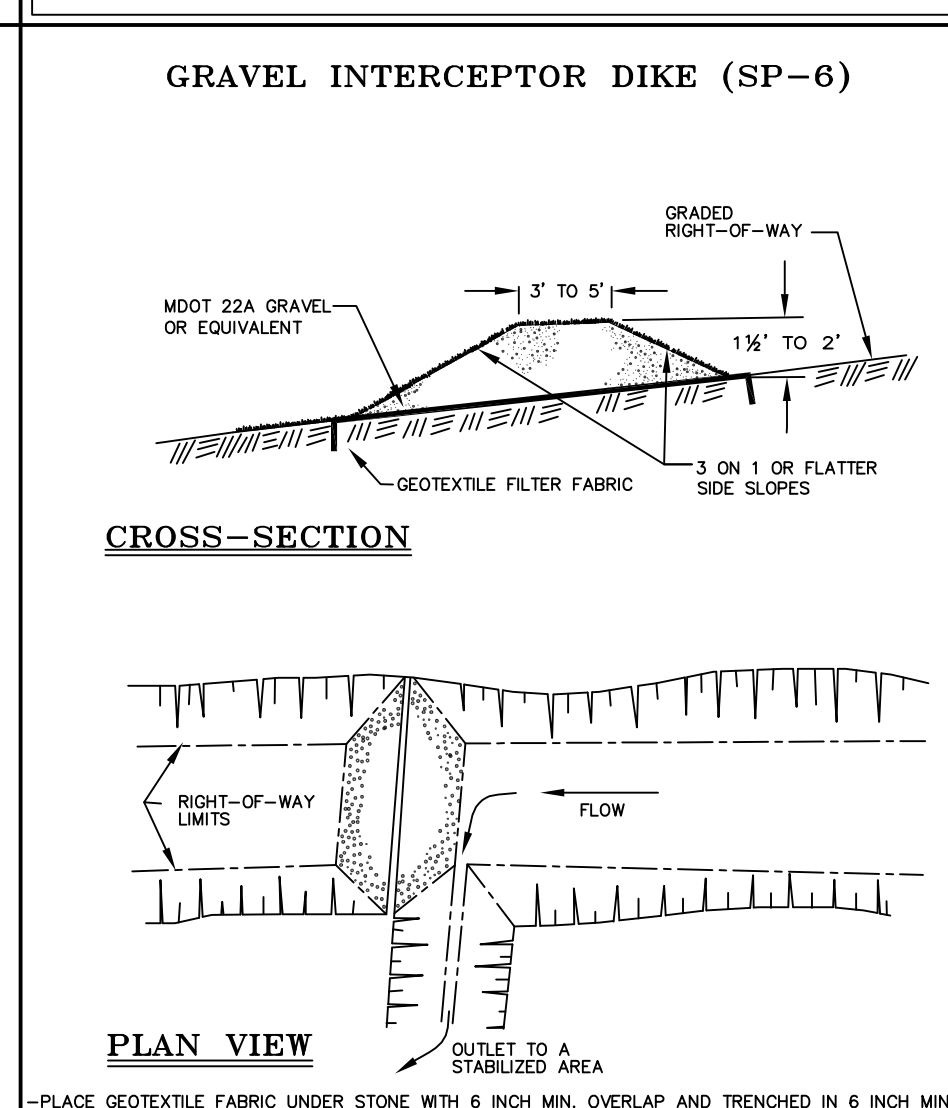
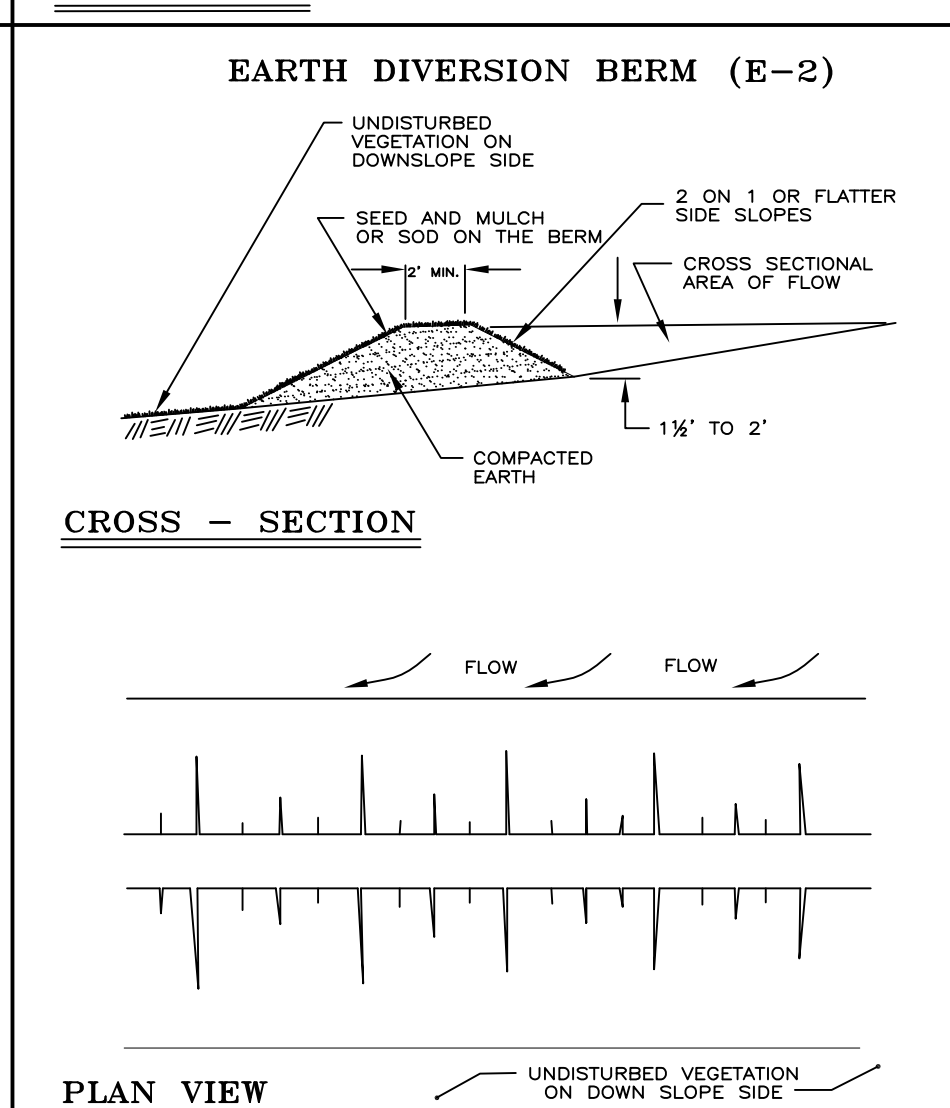
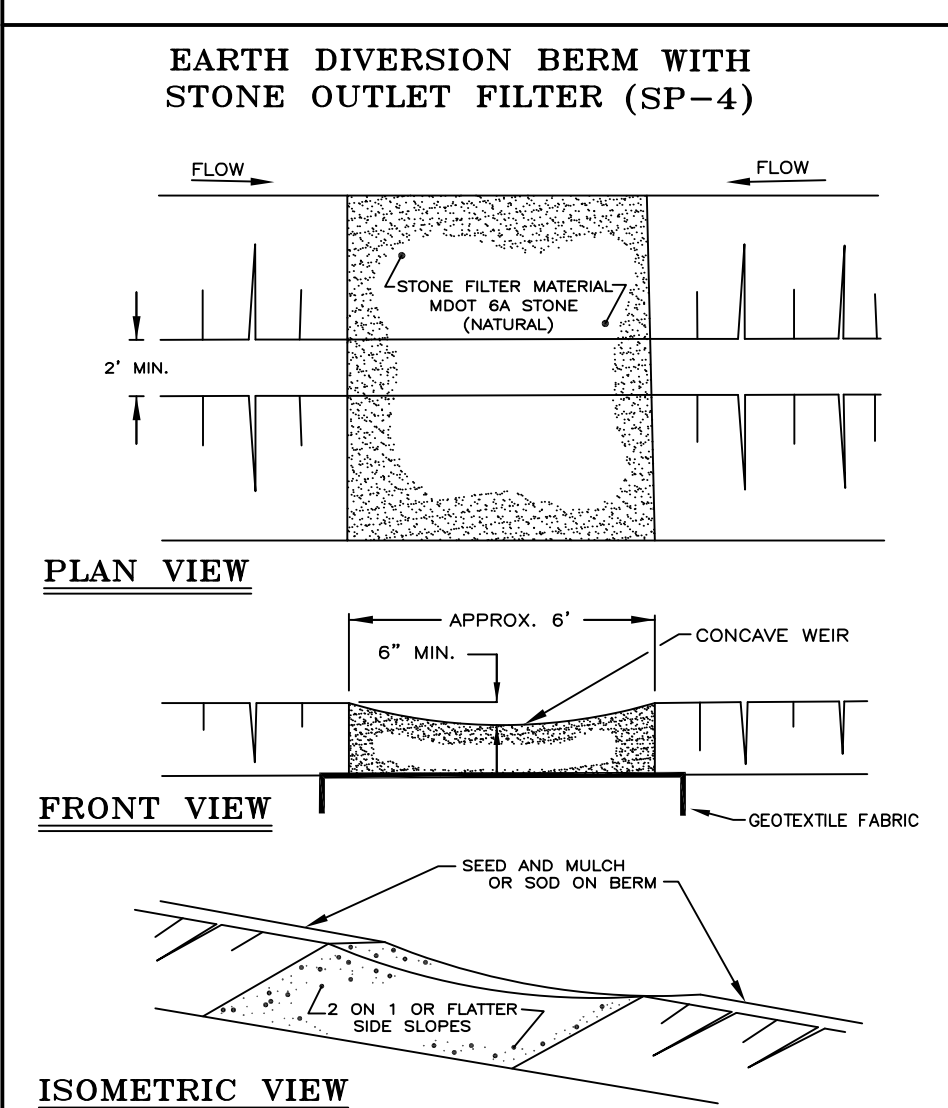
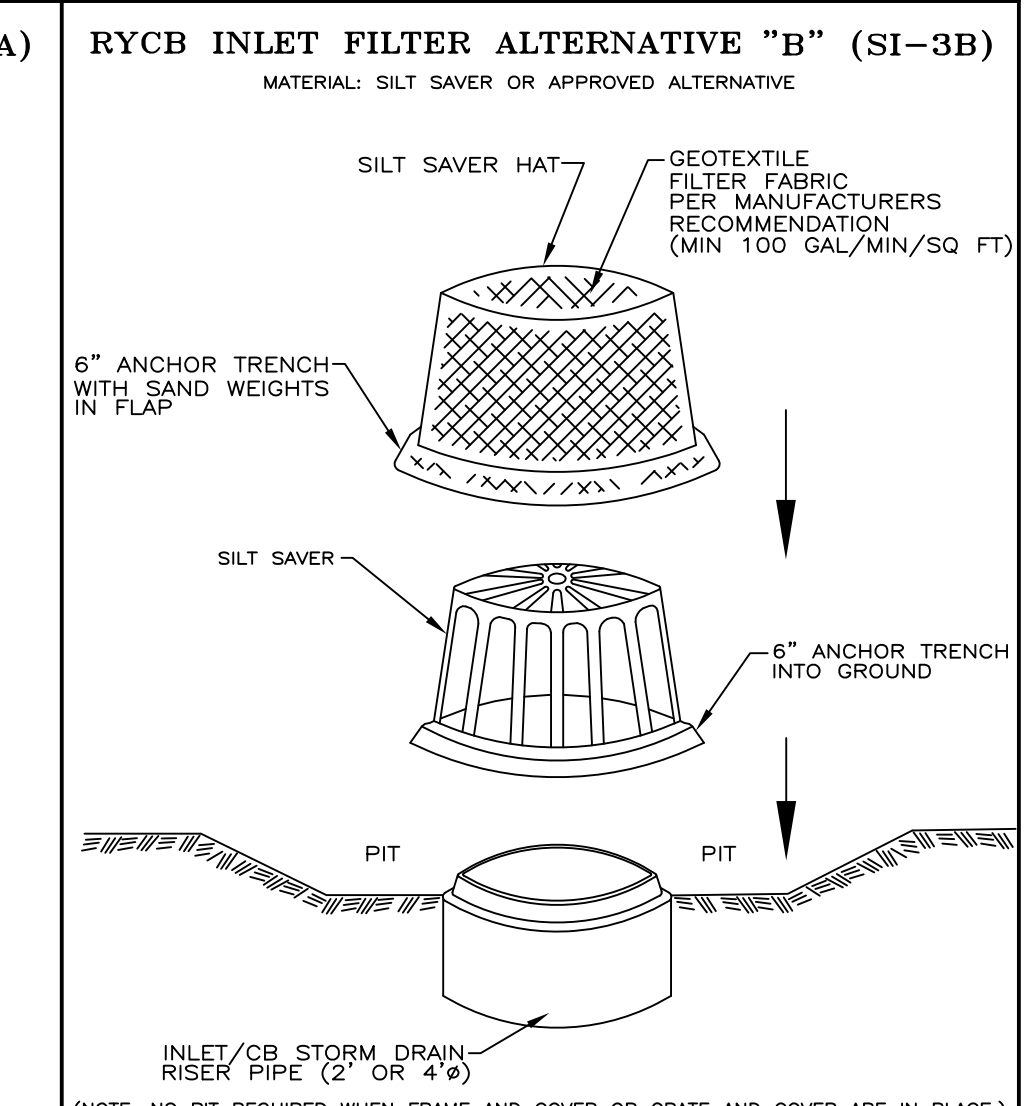
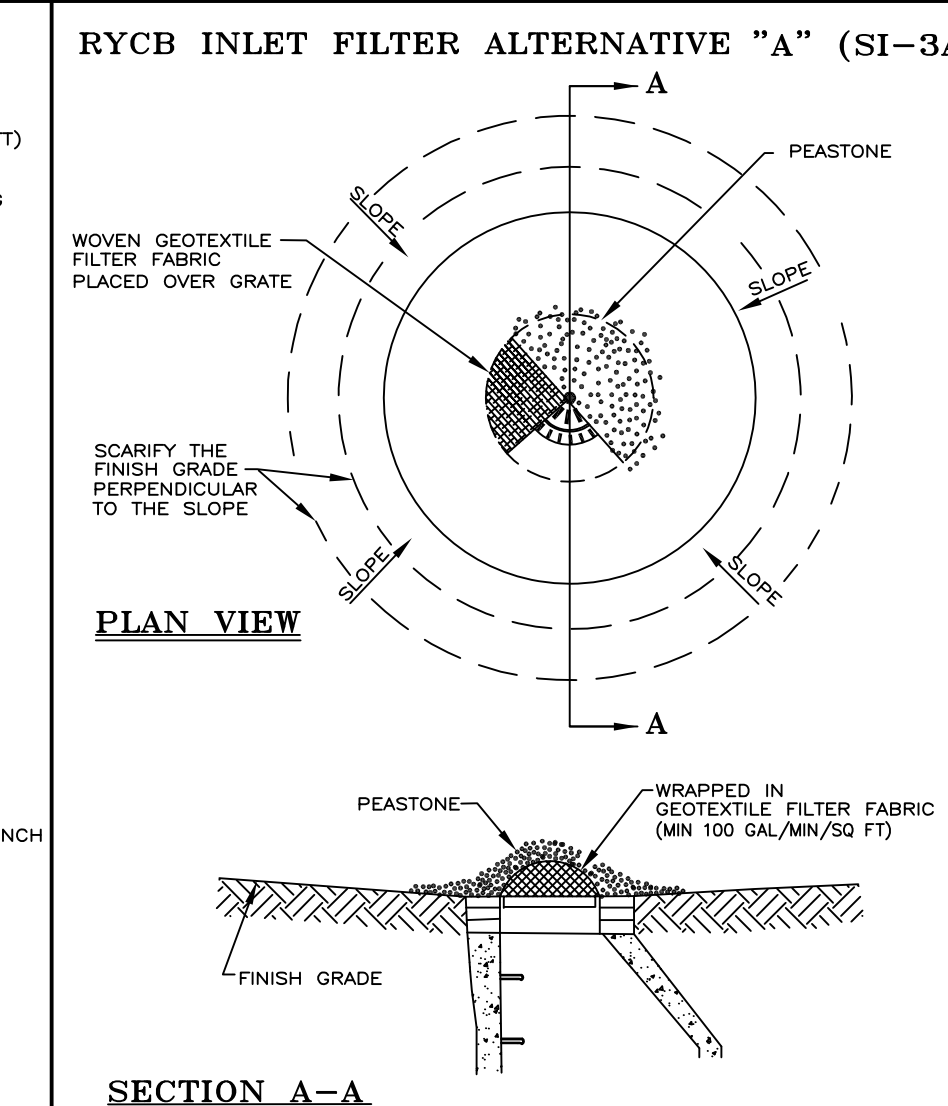
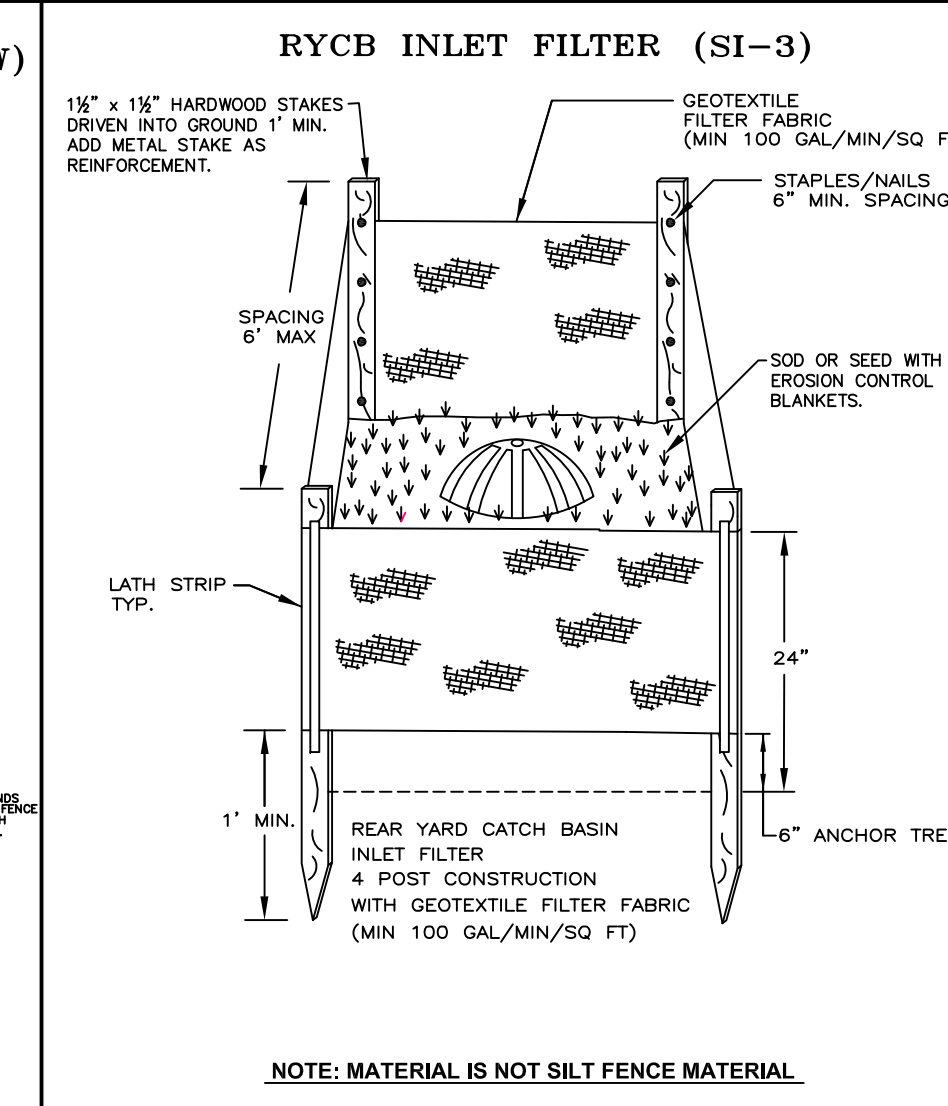
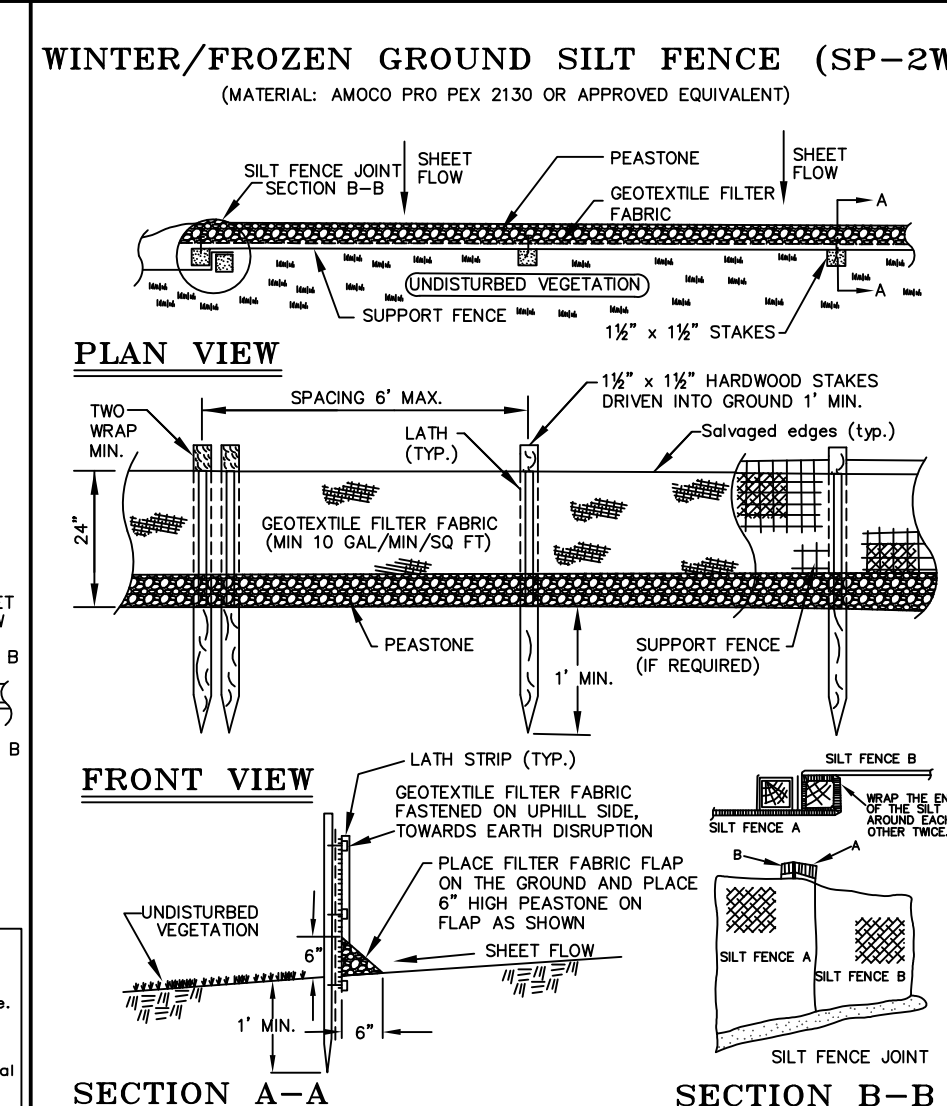
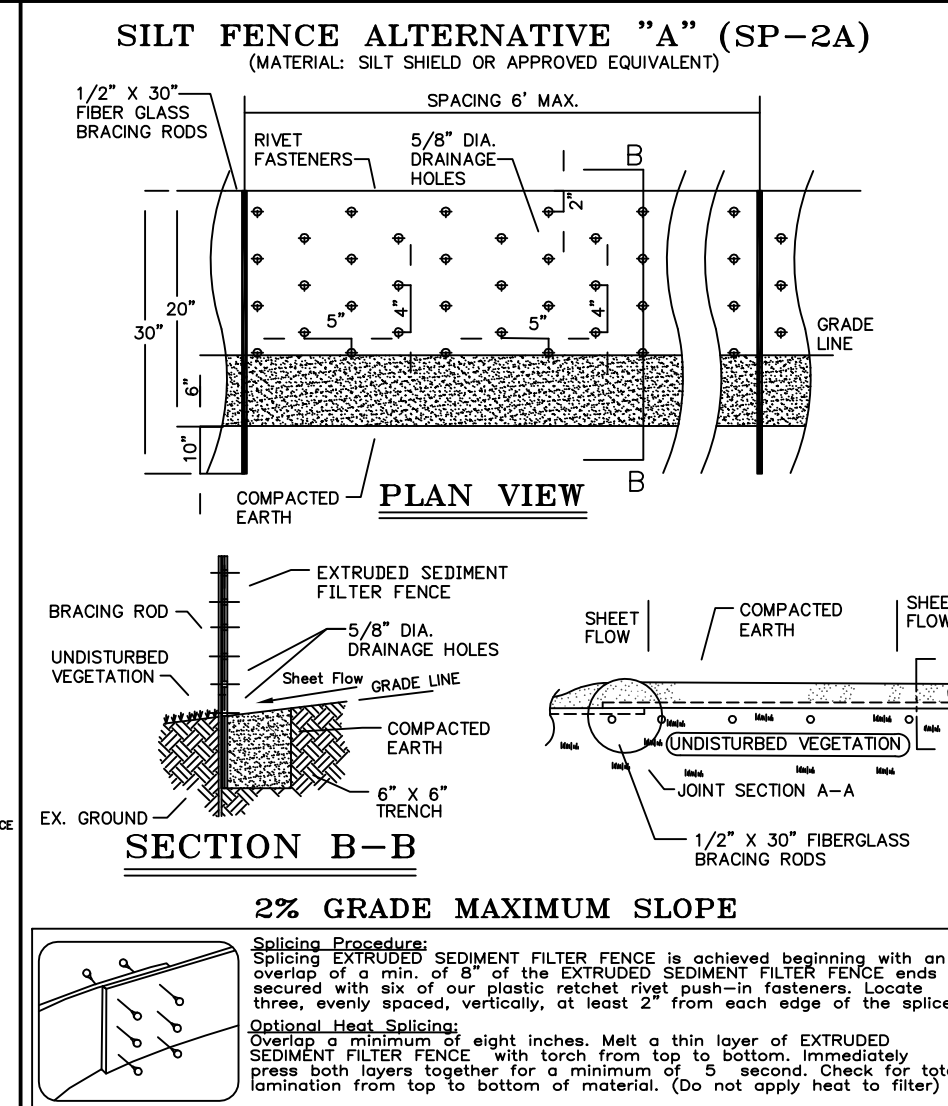
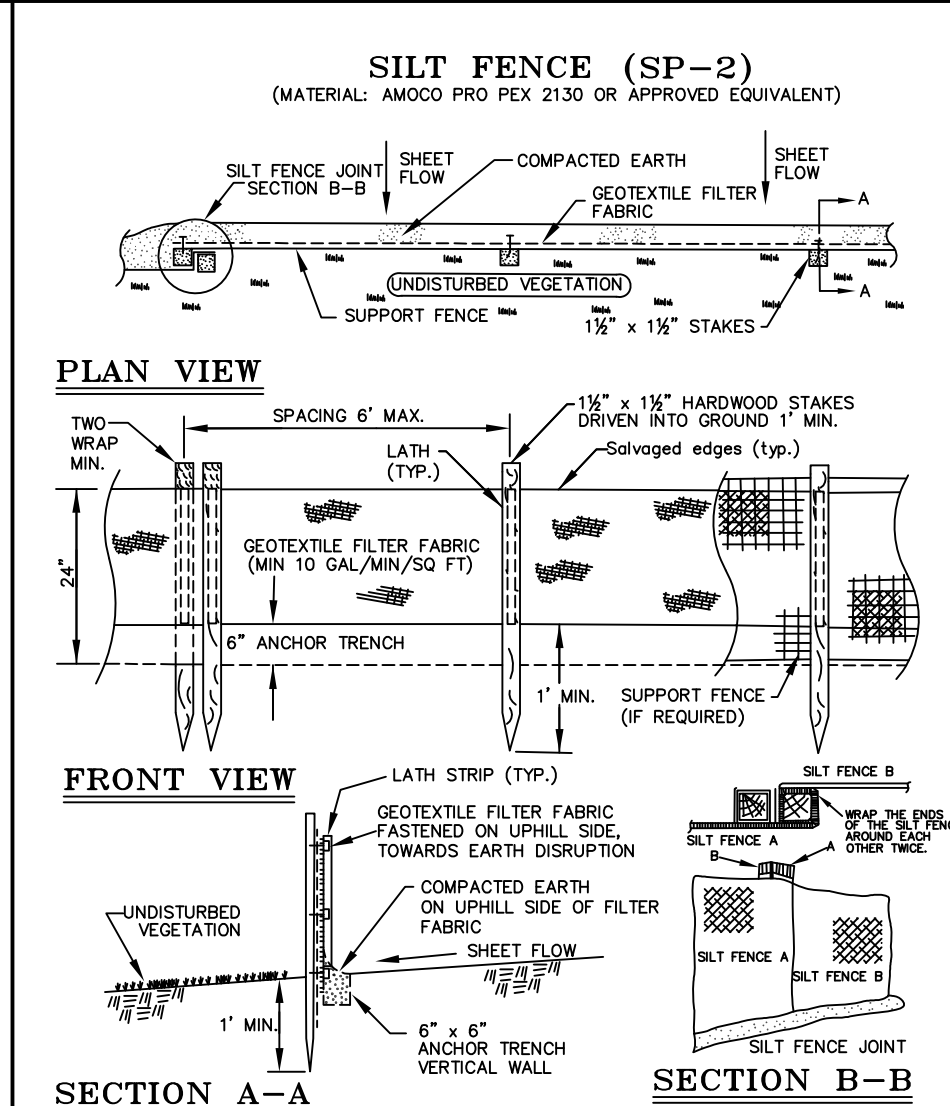
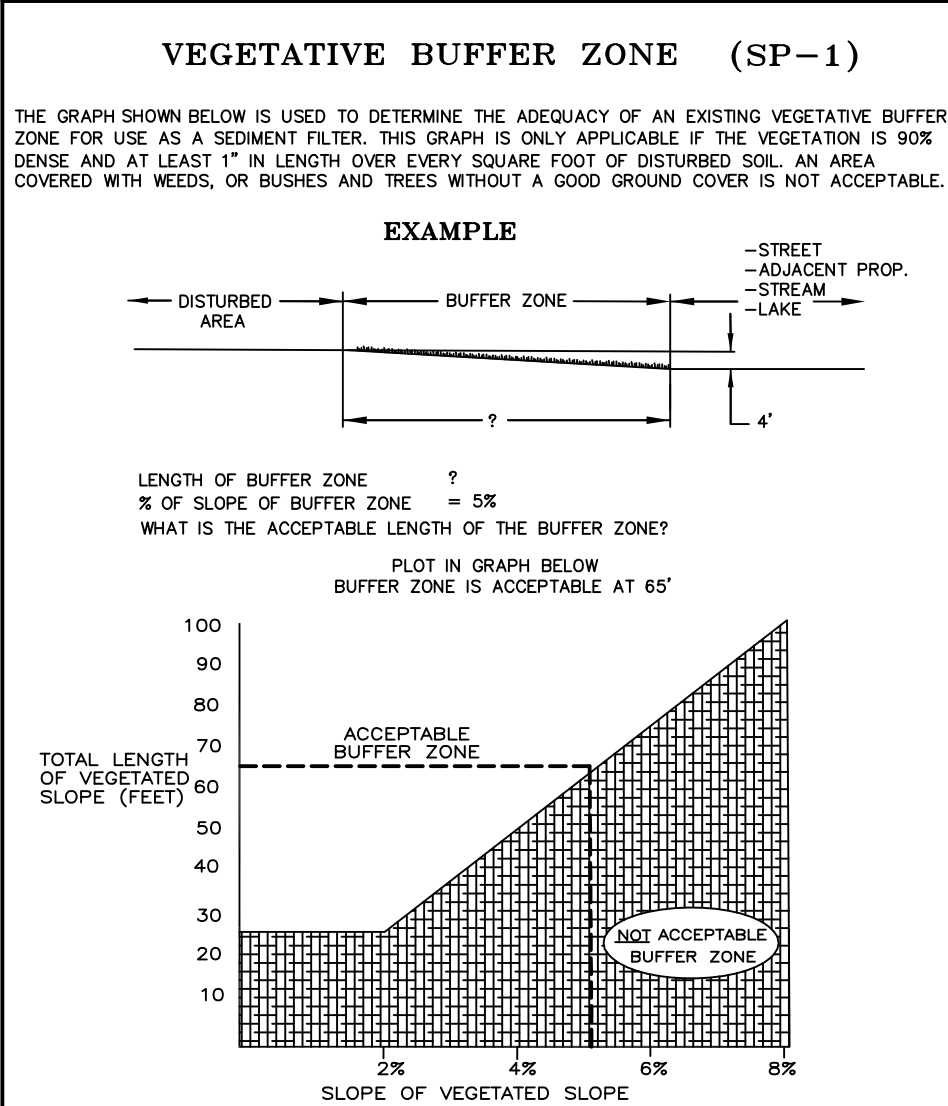
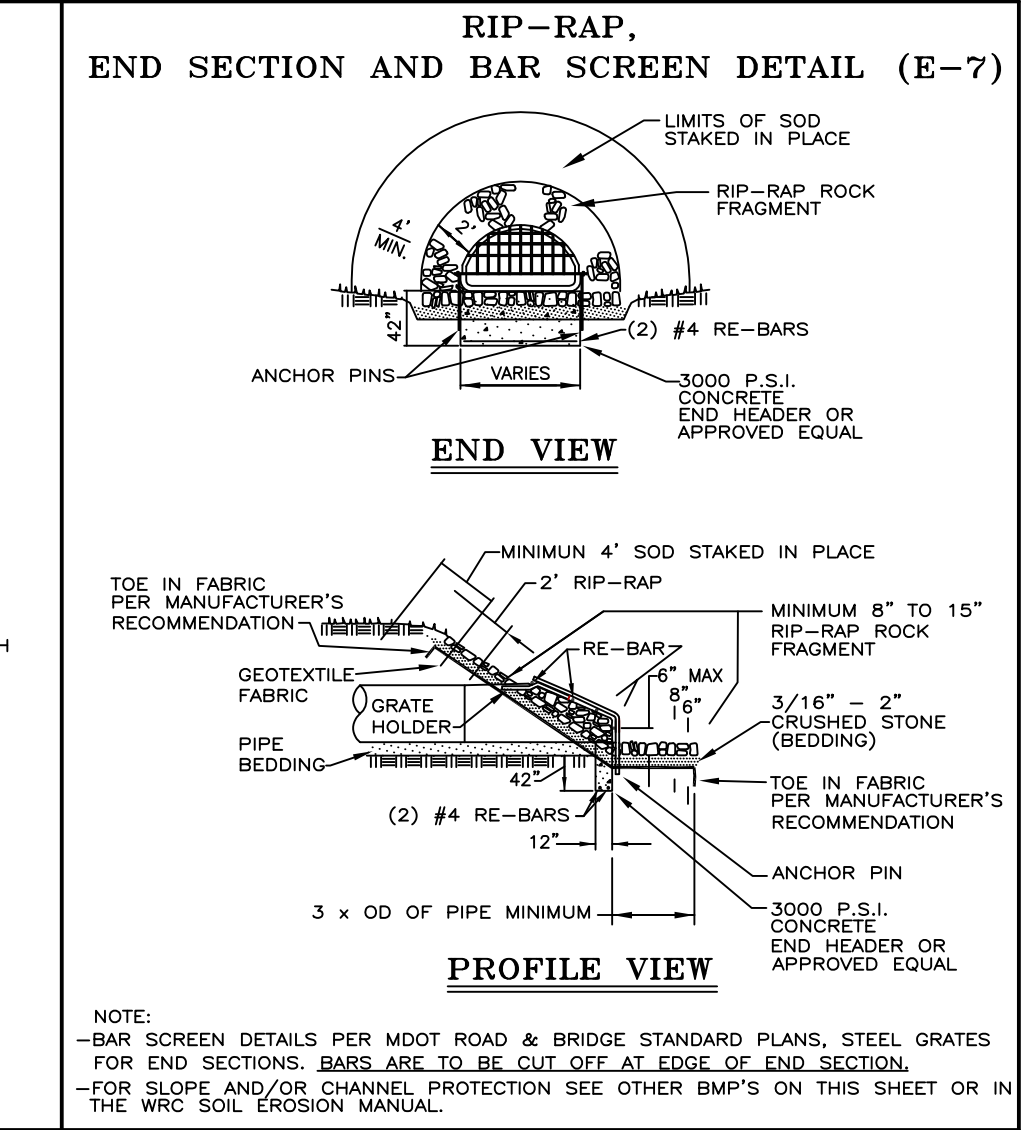
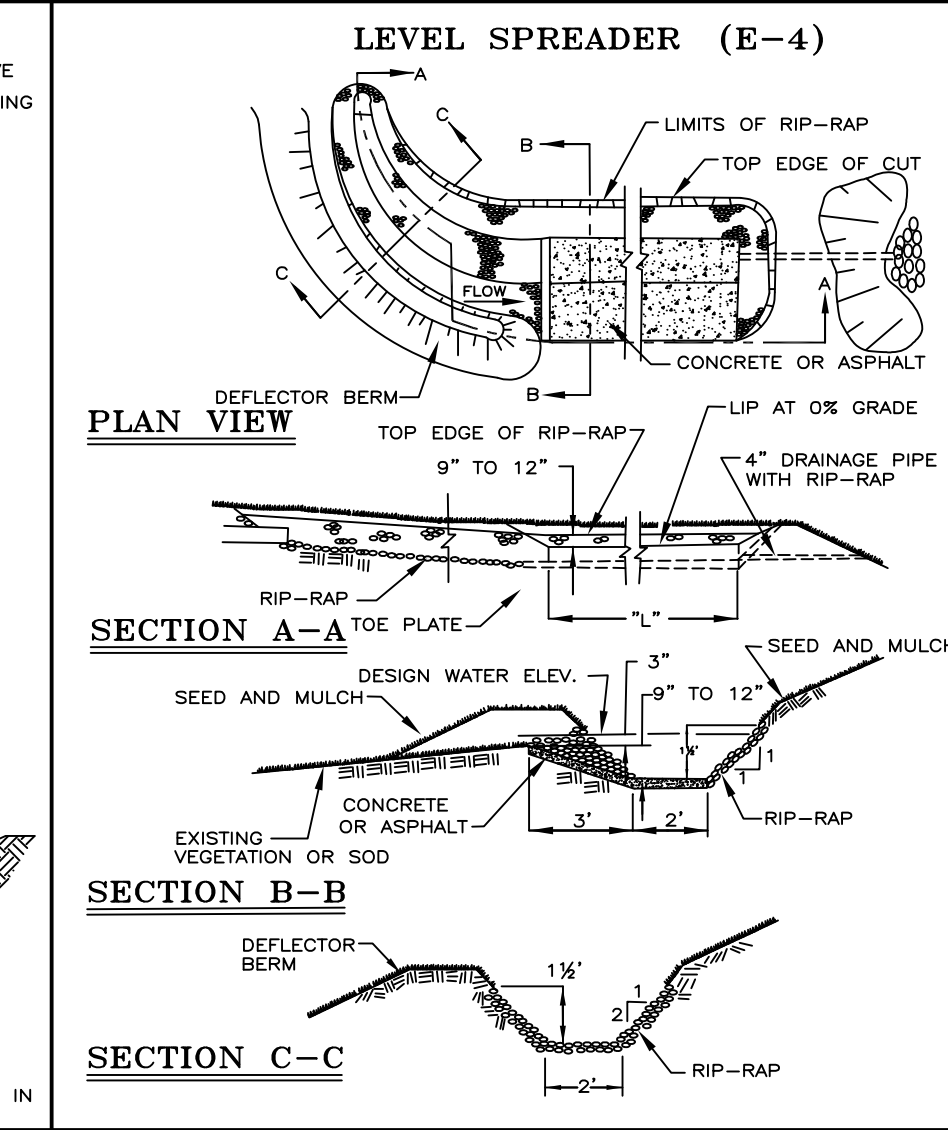
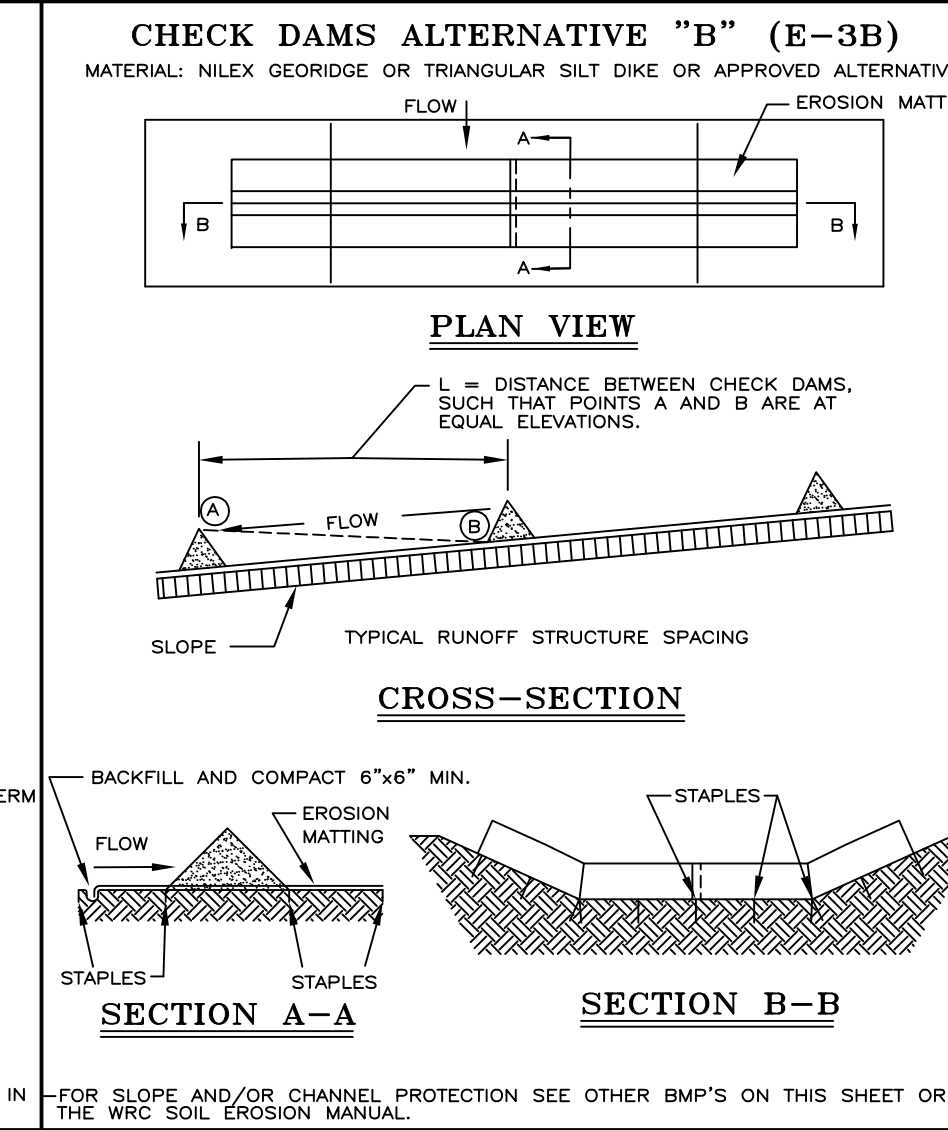
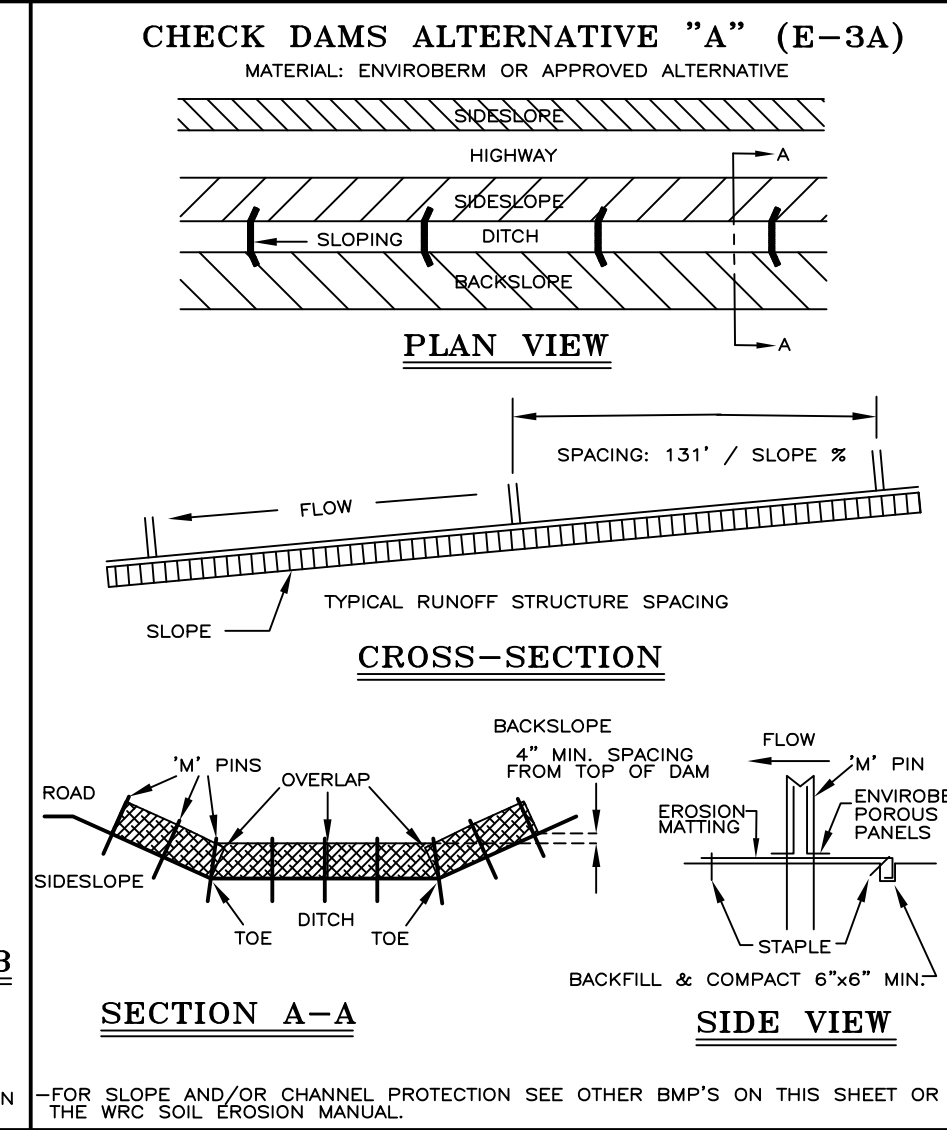
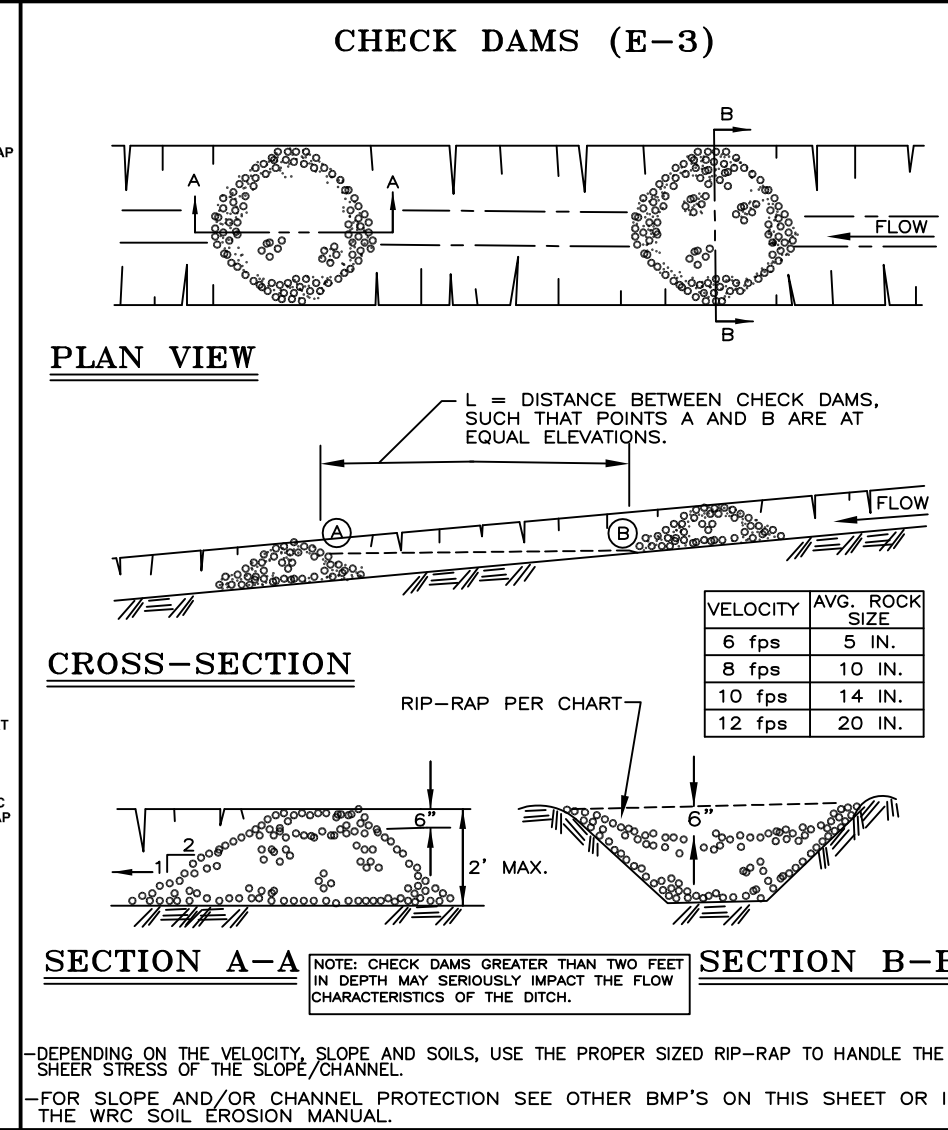
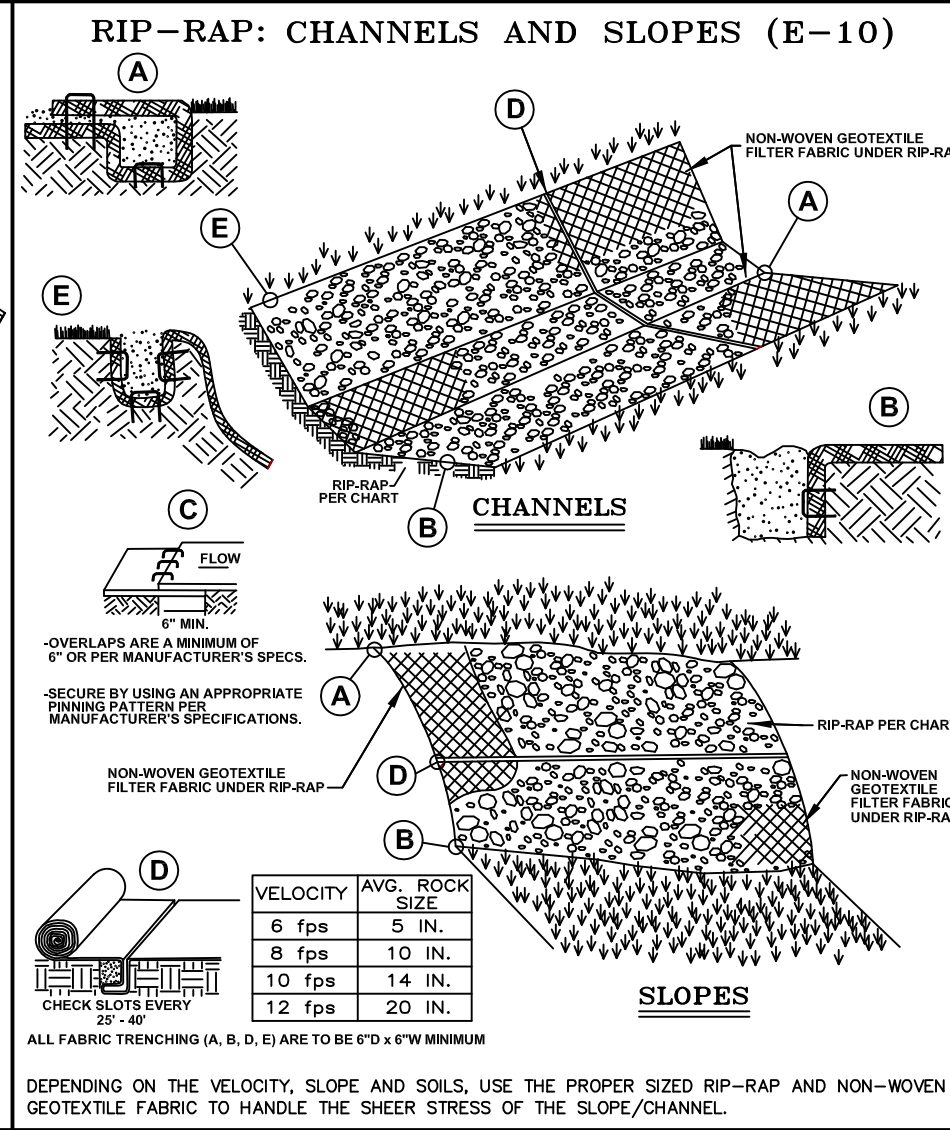
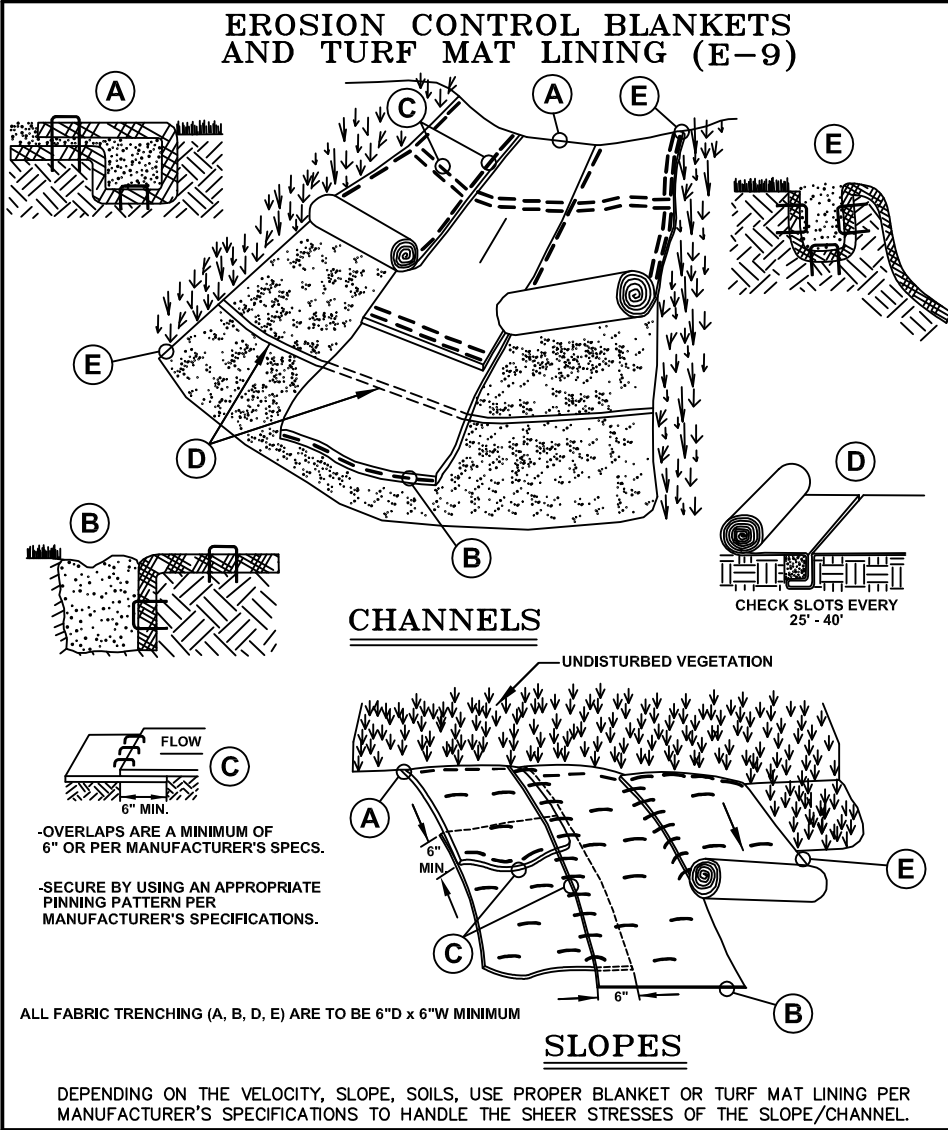
White Lake Township  
7525 Highland Road (M-59)  
White Lake, Michigan 48383  
248-698-3300



**STORM SEWER  
STANDARD DETAILS**

VERT. -  
SCALE: HORZ. AS NOTED

JOB NO.  
DATE ISSUED  
08/16/95  
SHEET NO.



**NOTE:**

WHILE PERFORMING WORK INVOLVING GROUNDS MAINTENANCE AND/OR THE CONSTRUCTION/MAINTENANCE OF ANY INFRASTRUCTURE, INCLUDING ROADS, WATER MAINS, SANITARY SEWERS, STORM DRAINS AND STORM WATER BEST MANAGEMENT PRACTICES (BMPs), CONTRACTORS SHALL MINIMIZE POLLUTION FROM STORM WATER RUNOFF THAT CAN AFFECT WATER QUALITY RELATED TO WORK ACTIVITIES. POLLUTANTS THAT COULD IMPAIR WATER QUALITY MAY INCLUDE FUEL, GREASE AND OIL, NUTRIENTS, BACTERIA AND PATHOGENS, LITTER AND DEBRIS, AND SOIL EROSION AND SEDIMENTATION. APPLICABLE BMPs SHALL BE IMPLEMENTED BY THE CONTRACTOR TO THE MAXIMUM EXTENT PRACTICABLE TO PROTECT WATER QUALITY AND WILDLIFE HABITAT.

**SOIL EROSION AND SEDIMENTATION CONTROL DETAILS**

**REVISION BLOCK**

| Rev. | By  | Desc.                                    |
|------|-----|------------------------------------------|
| 1    | WRC | PROPOSED DETAIL                          |
| 2    | WRC | FOR CONSTRUCTION APPROVAL / NAME CHANGES |
| 3    | WRC | FOR CONSTRUCTION APPROVAL / NAME CHANGES |
| 4    | WRC | FOR CONSTRUCTION APPROVAL / NAME CHANGES |

**ORIG. DATE:** 01/01/01

**SCALE:** NONE

**DESIGNED BY:** WRC

**DRAWN BY:** Mapping

**WRC WATER RESOURCES COMMSSION**

**ONE PUBLIC WORKS DRIVE, BLDG 95 WEST WATERFORD, MICHIGAN 48328-1907**

**SHEET NO.:** 1 of 1