RAMSEY COUNTY PUBLIC WORKS

WARNER ROAD CMP WASHOUT

S.A.P. 062-636-008

WARNER ROAD 500 FT WEST OF HIGHWAY 61

PLAN SYMBOLS

STATE LINE
COUNTY LINE
TOWNSHIP OR RANGE LINE
SECTION LINE
QUARTER LINE
SIXTEENTH LINE
EXISTING RIGHT OF WAY LINE
PROPOSED RIGHT OF WAY LINE
PROPERTY LINE
CORPORATE OR CITY LIMITS
RAILROAD
RAILROAD RIGHT-OF-WAY
RIVER OF CREEK
CULVERT
GUARDRAIL
WOOD FENCE
BARBED WIRE FENCE
WOVEN WIRE FENCE
CHAIN LINK FENCE
TIMBER WALL
STONE WALL
HEDGE
RAILROAD CROSSING SIGN
CROSSING GATE
MEANDER CORNER
SLOPE EASEMENT (CONST. LIMITS)
MARSH
DECIDUOUS TREE
CONIFEROUS TREE
BUSH OR SHRUB
WOODS
CATCH BASIN
BRIDGE
IRON PIPE OR ROD
MONUMENT (STONE, CONCRETE OR METAL)
WOODEN HUB

UTILITY SYMBOLS

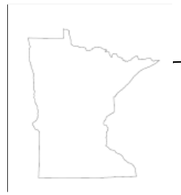
UTILITY POLE
GUY OR ANCHOR
STREET LIGHT
TELEPHONE PEDESTAL (PED)
GAS MAIN (G)
WATER MAIN (I)
TELEPHONE VAULT
ELECTRIC VAULT (P)
TELEPHONE CABLE (TEL)
ELECTRIC CABLE (ELEC)
STORM SEWER
SANITARY SEWER
SEWER MANHOLE
GATE VALVE
CONTROLLER CABINET
EXISTING HYDRANT
CABLE TELEVISION-BURIED (CATV)
FIBER OPTIC CABLE (FO)
TRAFFIC SIGNAL LINE (SIG)
TRAFFIC SIGNAL HAND HOLE (HH)

FOR PLANS AND UTILITIES SYMBOLS SEE MN/DOT TECHNICAL MANUAL.

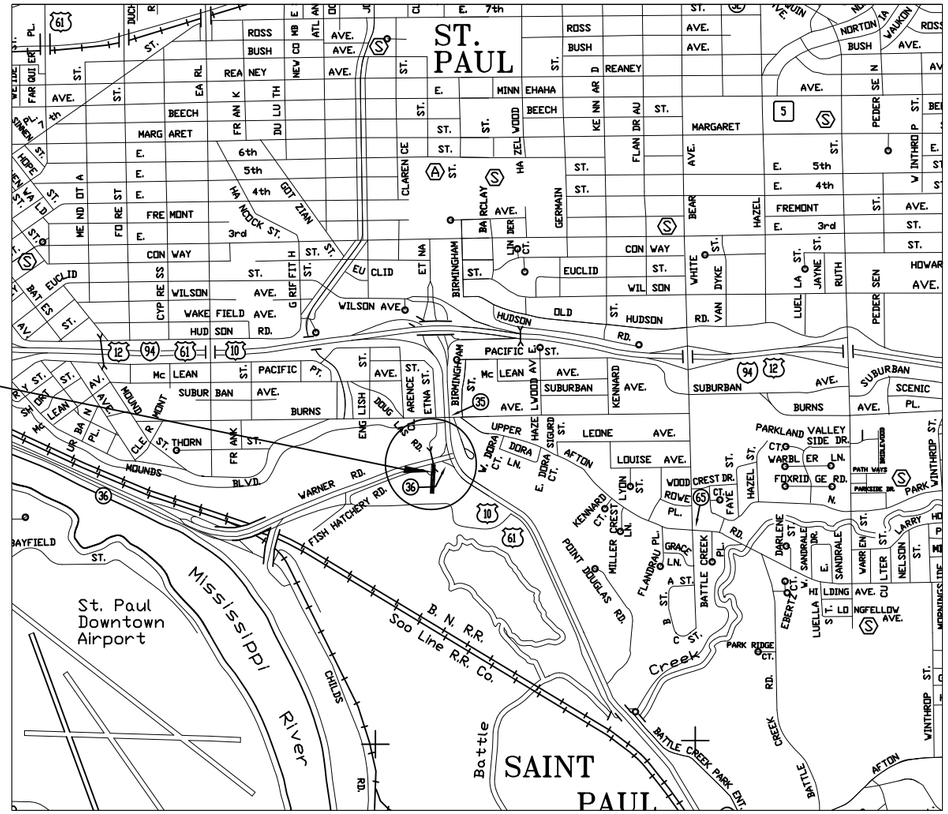
SCALES IN FEET

PLAN 0 10 20 30 40

INDEX MAP 0 1250 2500



PROJECT LOCATION
RAMSEY COUNTY
METRO DISTRICT



DESIGN DESIGNATION

MARYLAND AVENUE

PRESENT ADT (2013)	21,000
PROJECTED ADT (2033)	24,200
FUNCTIONAL CLASS	MINOR ARTERIAL
TRAFFIC LANES	4
PARKING LANES	0
DESIGN SPEED (MPH)	50
TON DESIGN	10

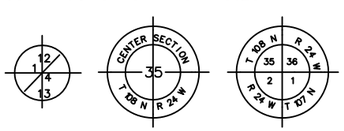
BASED ON STOPPING DISTANCE
HEIGHT OF EYE: 3.50 FEET
HEIGHT OF OBJECT: 2.0 FEET

-GOVERNING SPECIFICATIONS-

THE 2005 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS AND ORDINANCES WILL BE COMPLIED WITH IN THE CONSTRUCTION OF THIS PROJECT.



PLAN REVISIONS		
DATE	SHEET NO. & DESCRIPTION	BY

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D.THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."

DRAWN BY ANDREW MEIDL DATE 9-4-2013

CHECKED BY NICKLAUS FISCHER DATE 9-4-2013

RAMSEY COUNTY

RAMSEY COUNTY

DEPARTMENT OF PUBLIC WORKS

CONSTRUCTION PLAN FOR TRAFFIC CONTROL,REMOVAL AND PLACEMENT OF STORM SEWER AND RESTORATION.

WARNER ROAD

WARNER ROAD TO 500 FT. WEST OF HWY 61 .....STORM SEWER

INDEX

THIS PLAN CONTAINS 12 SHEETS

ASBUILT PLAN
CONFORMING TO CONST. RECORDS

DONE BY: - CT

DATE: - 03/21/17

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

NICKLAUS FISCHER LIC. NO. _____ DATE _____

APPROVED _____ DATE _____
RAMSEY COUNTY ENGINEER

APPROVED _____ DATE _____
CITY OF ST. PAUL

MINNESOTA DEPARTMENT OF TRANSPORTATION

_____ DATE _____
DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE WITH STATE-AID RULES/POLICY

_____ DATE _____
APPROVED FOR STATE AID FUNDING: STATE AID ENGINEER

ITEM NUMBER	ITEM	UNIT	TOTAL ESTIMATED QUANTITY	COUNTY STORM SEWER	NOTES
2021.501	MOBILIZATION	LS	1		
2104.501	REMOVE SEWER PIPE (STORM)	LF	168		
2104.501	REMOVE CONCRETE BARRIER	LF	43		
2104.503	REMOVE BITUMINOUS WALK	SF	364		
2104.505	REMOVE BITUMINOUS PAVEMENT	SY	5		2
2104.513	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	LF	41		1
2104.521	SALVAGE CHAIN LINK FENCE	LF	43		
2105.501	COMMON EXCAVATION (EV)	CY	165		
2105.523	COMMON BORROW (CV) (P)	CY	165		
2105.525	TOPSOIL BORROW (LV)	CY	148		
2123.610	STREET SWEEPER (WITH PICKUP BROOM)	HOUR	10		2
2123.610	TRACTOR BACKHOE	HOUR	10		2
2211.503	AGGREGATE BASE, CLASS 6 (CV) (P)	CY	13		2
2357.502	BITUMINIOUS MATERIAL FOR TACK COAT	GALLON	4		
2360.501	TYPE SP 12.5 WEARING COURSE MIXTURE (4,B)	TON	24		3
2451.507	GRANULAR BEDDING (LV)	CY	71	71	
2501.515	30" RC PIPE APRON	EACH	1	1	
2501.517	A-S DIAPHRAGM FOR 15" HDPE PIPE	EACH	10	10	2
2501.602	TRASH GUARD FOR 30" RC PIPE APRON	EACH	1	1	2
2503.511	HDPE 15" PIPE	LF	225	225	2
2503.541	30" RC PIPE SEWER DES 3006 CL V	LF	112	112	2
2503.602	CONNECT INTO EXISTING DRAINAGE STRUCTURE	EACH	1	1	2
2506.501	CONST DRAINAGE STRUCTURE DES 48-4020	LF	9.7	10	
2506.501	CONST DRAINAGE STRUCTURE DES 60-4020	LF	13.8	14	2,4
2511.501	RANDOM RIPRAP CLASS IV	CY	22	22	2
2533.501	CONC MED BARRIER DES 8303 TYPE A	LF	43		
2557.501	WIRE FENCE DESIGN 72-9322	LF	43		
2563.601	TRAFFIC CONTROL	LS	1		2
2573.530	INLET PROTECTION	EACH	2		
2573.540	FILTER LOG TYPE COMPOST	LF	450		
2573.550	EROSION CONTROL SUPERVISOR	LS	1		
2575.502	SEED MIXTURE 340	LB	44		
2575.523	EROSION CONTROL BLANKET CATEGORY 5	SY	1781		
2575.532	FERTILIZER TYPE 3	LB	110		

BASIS FOR ESTIMATED QUANTITIES

2360 MIXES	– BITUMINOUS MIXTURES – 115 LBS PER 1" THICKNESS PER SQ. YD.
2357.502	– BITUMINOUS MATERIAL FOR TACK COAT ESTIMATED AT 0.05 GAL. PER SQ. YD. PER APPLICATION
2575.532	– FERTILIZER APPLICATION RATE 300 LBS/ACRE
2575.502	– SEED APPLICATION RATE 120 LBS/ACRE

QUANTITY NOTES

1. SAWCUT SHALL BE FULL DEPTH
2. SEE SPECIAL PROVISIONS
3. MATCH EXISTING BITUMINOUS DEPTH
4. MATERIALS AND INSTALLATION OF 11 GAUGE STAINLESS STEEL SCOUR PLATE WITH STAINLESS STEEL BOLTS/FIXTURES INCIDENTAL TO THIS ITEM

CONSTRUCTION NOTES

WATER, GAS, ELECTRIC,TELEPHONE, SEWER, AND T.V. CABLE LINES SHOWN ON THE DRAWINGS AND CROSS–SECTIONS ARE PLOTTED FROM THE BEST INFORMATION AVAILABLE AT THE TIME OF PLAN PREPARATION, BUT MAY NOT REFLECT ACTUAL LOCATIONS OR ELEVATIONS. THE CONTRACTOR SHALL VERIFY LOCATION OF ALL UTILITIES BEFORE BEGINNING CONSTRUCTION WHICH MAY BE AFFECTED BY A UTILITY CONFLICT. THE CONTRACTOR SHALL GIVE 48 HOURS NOTICE TO THE OWNERS OF ALL KNOWN UTILITIES BEFORE STARTING ANY OPERATIONS AFFECTING THOSE PROPERTIES, OR BEGINNING EXCAVATION IN THE VICINITY OF THOSE PROPERTIES. THE CONTRACTORS ATTENTION IS DIRECTED TO SECTION 1507 IN THE STANDARD SPECIFICATIONS. UTILITY COMPANIES WILL RELOCATE THEIR FACILITIES CONCURRENTLY WITH THE CONSTRUCTION OPERATIONS UNDER THIS CONTRACT. CONTRACTOR SHALL SCHEDULE CONSTRUCTION IN COOPERATION WITH UTILITY RELOCATION.

EXCESS EXCAVATED AND UNSUITABLE MATERIALS AS DETERMINED BY THE ENGINEER SHALL BE DISPOSED OF IN ACCORDANCE WITH THE REQUIREMENTS OF 2104.3C3 AND 2105.3D

COMPACTION IN GRADING ITEMS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH SPEC. 2105.3F2 "QUALITY COMPACTION METHOD".

COMPACTION OF BITUMINOUS SURFACE ITEMS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH SPEC. 2360.6B "ORDINARY COMPACTION METHOD."

WHEN EXCAVATING ADJACENT TO INPLACE PAVEMENT, NO MATERIAL SHALL BE REMOVED FROM INSIDE AN APPROXIMATE 2:1 SLOPED LINE DRAWN DOWNWARD AND OUTWARD FROM THE BOTTOM OF THE INPLACE PAVEMENT.

WHEN CONNECTION TO EXISTING BITUMINOUS PAVEMENT IS REQUIRED, THE EDGE OF EXISTING PAVEMENT SHALL BE CUT TO A NEAT LINE AND TACK COAT APPLIED PRIOR TO CONSTRUCTING ASPHALT SURFACING.

STABILIZING AGGREGATE SHALL BE APPLIED IF NECESSARY TO ACHIEVE SATISFACTORY SURFACE STABILITY AS DETERMINED BY THE ENGINEER. THE MATERIAL SHALL SATISFY THE REQUIREMENTS OF SECTION 3149.2C AND SHALL BE APPLIED IN ACCORDANCE WITH SECTION 2105.3G OF THE STANDARD SPECIFICATIONS.

COMPACTION OF AGGREGATE BASE SHALL BE ACCOMPLISHED BY THE "QUALITY COMPACTION METHOD"

THE CONTRACTOR SHALL CONTACT GOPHER STATE ONE CALL FOR EXISTING UTILITY LOCATIONS PRIOR TO ANY EXCAVATION.

PROVIDE FOR REMOVAL AND DISPOSAL (OUTSIDE THE CONSTRUCTION ZONE) OF ALL INPLACE STRUCTURES THAT WILL INTERFERE WITH CONSTRUCTION. DISPOSAL OF ITEMS REMOVED UNDER THIS CONTRACT SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF 2104.3C3.

STANDARD PLATES	
THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERALHIGHWAY ADMINISTRATION, SHALL APPLY ON THIS PROJECT	
3000L	REINFORCED CONCRETE PIPE (5 SHEETS)
3006G	GASKET JOINT FOR RCP PIPE (2 SHEETS)
3100G	CONCRETE APRON FOR CONCRETE PIPE
3133C	RIPRAP AT RCP OUTLETS
3145G	CONCRETE PIPE OR PRECAST BOX CULVERT TIES
3146C	ANTI SEEPAGE DIAPHRAM
4020J	MANHOLE OR CATCH BASIN FOR USE WITH OR WITHOUT TRAFFIC LOADS (SHEETS 2)
4101D	CATCH BASIN GRATE FRAME CASTING (FOR SQUARE GRATE)
4108F	ADJUSTMENT RINGS FOR CATCH BASINS AND MANHOLES
7111J	INSTALLATION OF CATCH BASIN CASTINGS
8308A	REINFORCED CONCRETE MEDIAN BARRIER TYPE F (NON-GLARE SCREENTYPE) GENERAL CONSTRUCTION NOTES & END ANCHORAGE
9322K	CHAIN LINK FENCE (2 SHEETS)

ASBUILT PLAN
CONFORMING TO
CONST. RECORDS

DONE BY: – CT

DATE: – 03/21/17

NO.	REV-DATE	BY:	DESCRIPTION

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SIGNED: _____

REG NO: _____ DATE: _____

WARNER ROAD WASHOUT
500 FT. WEST OF HIGHWAY 61

S.A.P. 062-636-008

COUNTY PROJ. SO36E

RAMSEY COUNTY

QUANTITIES AND NOTES

SHEET 2 OF 12 SHEETS

H:\PROJECTS\MAINTENANCE\P-XXXX WARNER WASHOUT\WARNER WASHOUT\BASE DWG\SEQ.DWG September 9, 2013 11:10 AM

WARNER ROAD

PEDESTRIAN BRIDGE

BITUMIOUS PATHWAY

SAWCUT AT NEAREST JOINT AND REMOVE ±43' CONCRETE BARRIER

SAWCUT AND REMOVE BITUMINOUS ROAD PAVEMENT

SAWCUT AND REMOVE BITUMINOUS PATH

SALVAGE CHAIN LINK FENCE

CAUTION LOW CLEARANCE PROTECT PEDESTRIAN BRIDGE

REMOVE AND DISPOSE ±168' OF STORM SEWER CMP

WASHOUT AREA

APPROXIMATE LOCATION OF MET COUNCIL SANITARY SEWER

WASHOUT SEDIMENT

ASBUILT PLAN
CONFORMING TO CONST. RECORDS

DONE BY: – CT

DATE: – 03/21/17

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CONTRACTOR SHALL USE APPROPRIATE EROSION CONTROL MEASURES DURING ALL PHASES OF PROJECT

SCALE IN FEET
0 40 80

H:\PROJECTS\MAINTENANCE\P-XXXX WARNER WASHOUT\WARNER WASHOUT\BASE DWG\REMOVALS.DWG September 9, 2013 11:11 AM

NO.	REV-DATE	BY:	DESCRIPTION

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REG NO: _____ DATE: _____

WARNER ROAD WASHOUT

500 FT. WEST OF HIGHWAY 61

S.A.P. 062-636-008

COUNTY PROJ. SO36E

RAMSEY COUNTY

REMOVALS

SHEET 3 OF 12 SHEETS

WARNER ROAD

BITUMIOUS PATHWAY

PEDESTRIAN BRIDGE

EX CB 1
ALIGN = WARNER WASHOUT
STA = 0+12.85, OFFSET = 0.0'
RIM = ~~801.31~~ 801.05
FRAME = EXISTING
BOTTOM OF STRUCTURE=797.41
INV OUT=~~797.41~~ (15") - SW
797.55

CONNECT TO EXISTING
STORM SEWER

23'-15" HDPE @ 8.33%

SD-2 ~~48-4020~~
ALIGN = WARNER WASHOUT
STA = 0+35.89, OFFSET = 0.0'
RIM = ~~799.99~~ 799.89
FRAME = R–2564
BOTTOM OF STRUCTURE=789.40
INV IN = ~~795.49~~ (15") - NE 795.29
INV OUT=~~789.40~~ (15") - SW 789.79

202'-15" HDPE @ 30.00%
HDPE PIPE FUSED JOINTS WITH
ANTI SEEPAGE DIAPHRAGMS
EVERY 20 FEET

MH-3 60-4020
ALIGN = WARNER WASHOUT
STA = 2+29.84, OFFSET = 0.0'
RIM = ~~743.52~~ 743.44
FRAME = R–1733B
BOTTOM OF STRUCTURE=728.84
INV IN = ~~731.21~~ (15") - NE 736.84
INV OUT=~~728.84~~ (30") - S 734.94

TOP OF SCOUR PLATE
ELE: 737.94

112'-30" RCP @ 0.50%
RC PIPE TIED

APPROXIMATE LOCATION OF MET
COUNCIL SANITARY SEWER

APRON-4 30in RC PIPE APRON W-TRASH GUARD
ALIGN = WARNER WASHOUT
STA = 3+41.41, OFFSET = 0.0'
OUTLET = ~~728.28~~ (30") 734.03

22 CUBIC YARDS OF RANDOM RIPRAP CLASS IV
GEOTEXTILE FABRIC CLASS IV
SEE STANDARD PLATE 3133C
GOETEXTILE SHALL BE INCIDENTAL TO RANDOM RIPRAP

ASBUILT PLAN
CONFORMING TO
CONST. RECORDS

DONE BY: – CT

DATE: – 03/21/17

SCALE IN FEET
0 40 80

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WARNER ROAD WASHOUT

500 FT. WEST OF HIGHWAY 61

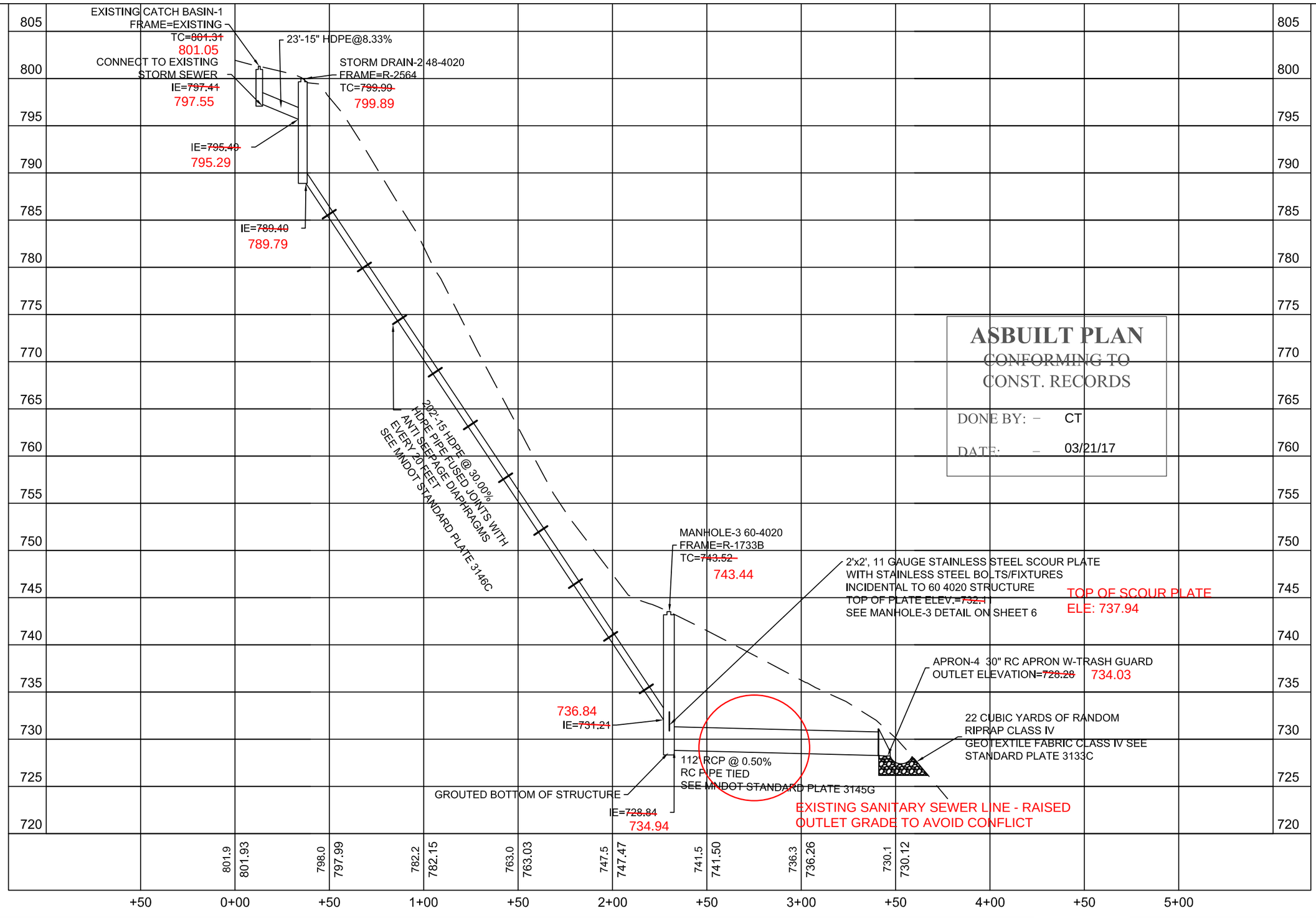
S.A.P. 062-636-008

COUNTY PROJ. SO36E

RAMSEY COUNTY

PLAN LAYOUT

SHEET 4 OF 10 SHEETS



ASBUILT PLAN
~~CONFORMING TO~~
CONST. RECORDS
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DATE: – 03/21/17

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WARNER ROAD WASHOUT
500 FT. WEST OF HIGHWAY 61

S.A.P. 062-636-008
COUNTY PROJ. SO36E

RAMSEY COUNTY

STORM PROFILE
SHEET 5 OF 12 SHEETS

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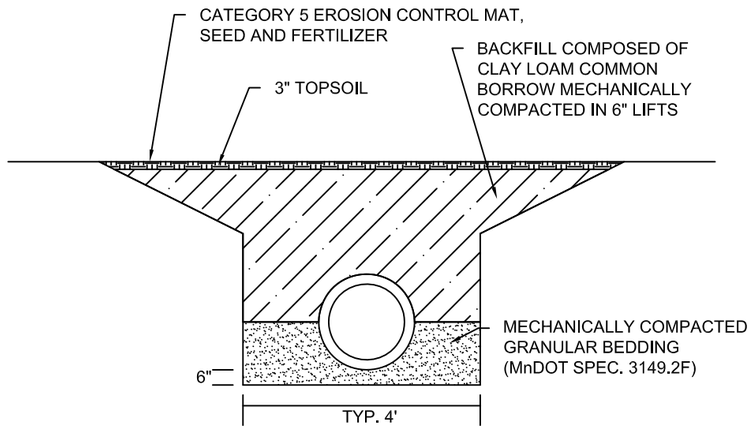

PIPE BEDDING DETAIL

ASBUILT PLAN
CONFORMING TO
CONST. RECORDS

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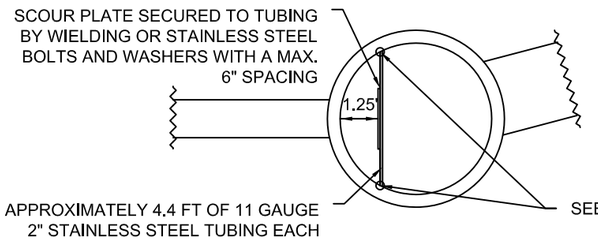
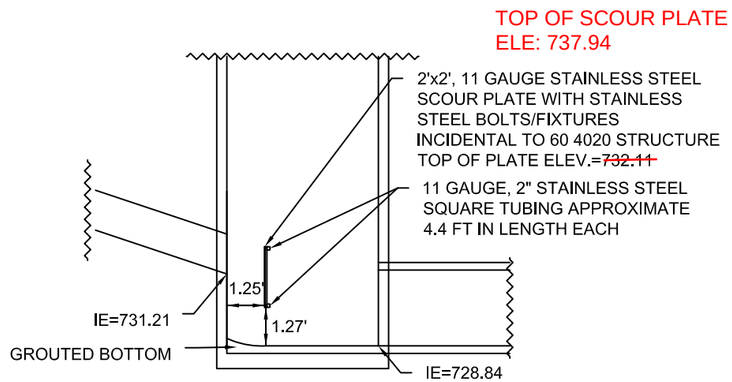
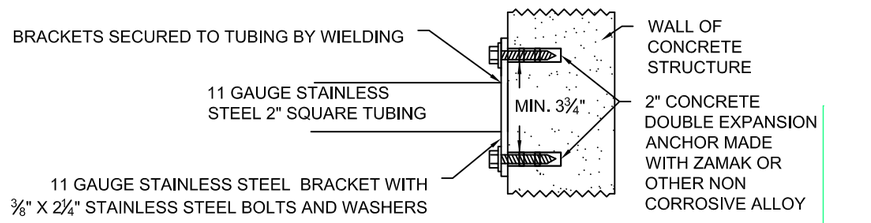
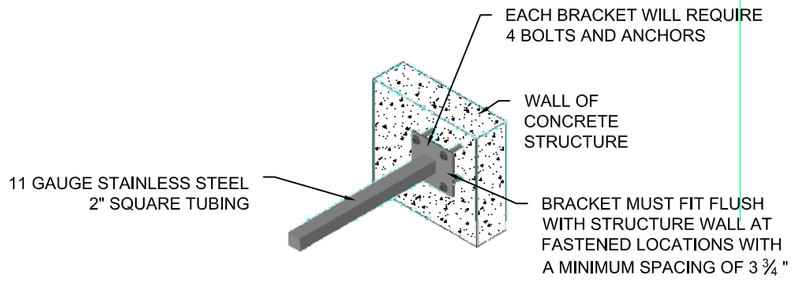




MANHOLE-3 60 4020 DETAIL





BRACKET DETAIL

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WARNER ROAD WASHOUT

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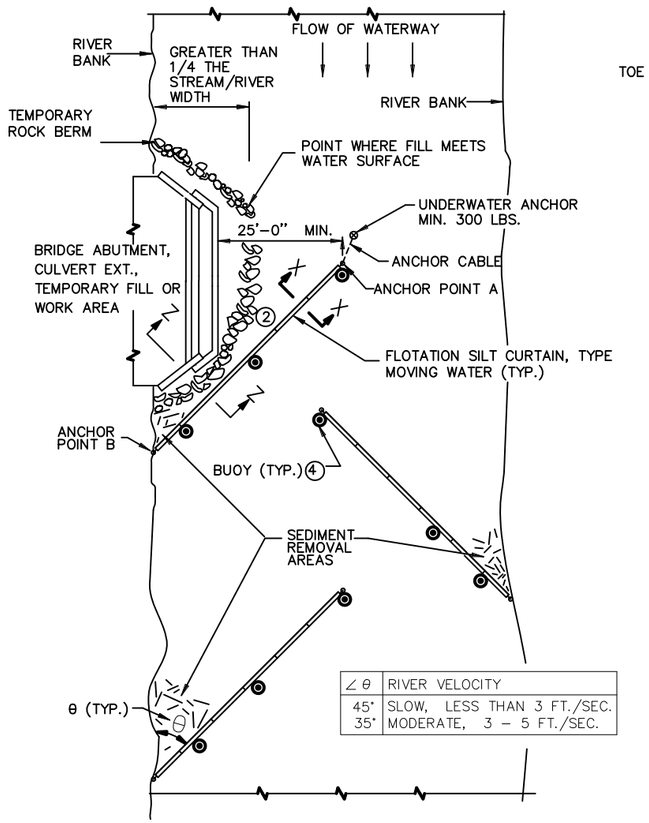
COUNTY PROJ. SO36E

RAMSEY COUNTY

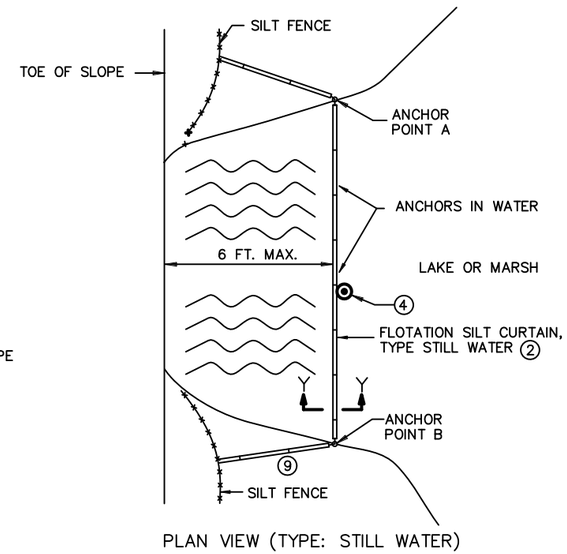
DETAILS

SHEET 6 OF 12 SHEETS

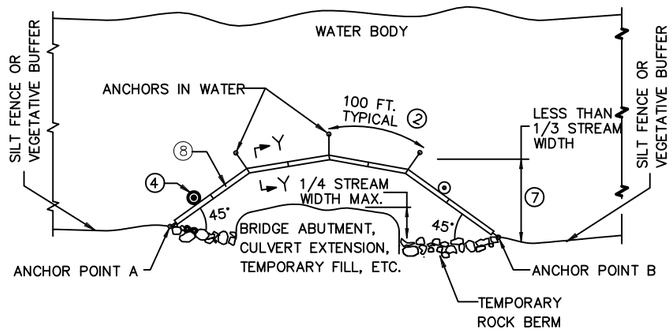
H:\PROJECTS\MAINTENANCE\P-XXXX WARNER WASHOUT\WARNER WASHOUT\BASE DWG\STORM.DWG September 9, 2013 11:19 AM



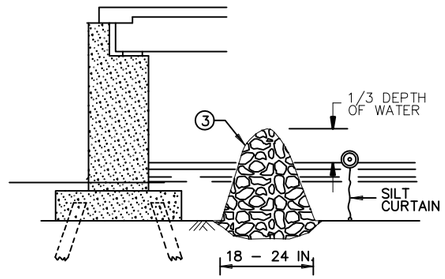
PLAN VIEW (TYPE: MOVING WATER)



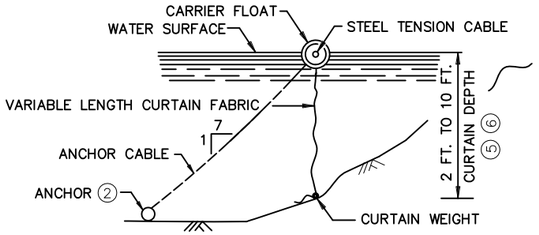
PLAN VIEW (TYPE: STILL WATER)



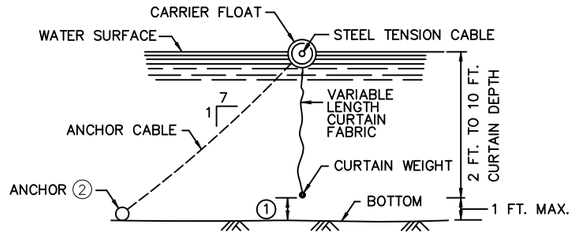
PLAN VIEW (TYPE: WORK AREA)



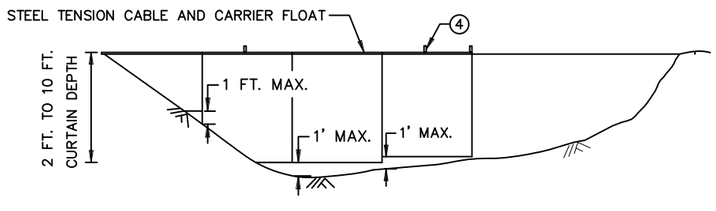
SECTION Z–Z TEMPORARY ROCK BERM
FOR SEDIMENT CONTROL



SECTION Y–Y

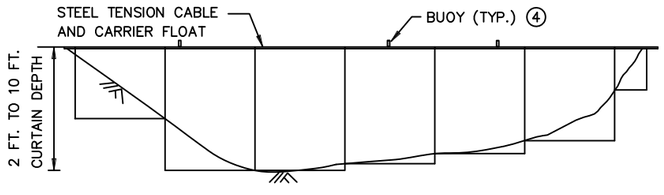


SECTION X–X



FLOTATION SILT CURTAIN – TYPE: MOVING WATER 5

USE FOR SMALLER RIVERS
WITH SLOW AND MODERATE VELOCITIES



FLOTATION SILT CURTAIN – TYPE: WORK AREA AND STILL WATER 5

FOR CONTAINING OVERFLOWS FROM WEIRS, STANDPIPES, SETTLING PONDS

DESIGN GUIDELINES:
MOVING WATER

WHEN TEMPORARY FILL ENCROACHES MORE THAN 1/4 BUT LESS THAN 1/3 WIDTH OF THE STREAM.
MINIMUM WATER DEPTH: 3 FT. 1 6
MAXIMUM WATER DEPTH: 11 FT.
MAXIMUM WATER VELOCITY: 5 FT./SEC.

DESIGN GUIDELINES:
WORK AREA

WHEN TEMPORARY FILL ENCROACHES LESS THAN 1/4 OF THE WIDTH OF STREAM.
MAXIMUM WATER DEPTH: 10 FT.
MAXIMUM WATER VELOCITY: 5 FT./SEC.

DESIGN GUIDELINES:
STILL WATER 6

MINIMUM WATER DEPTH: 0 FT.
MAXIMUM WATER DEPTH: 10 FT.

ASBUILT PLAN
CONFORMING TO
CONST. RECORDS

DONE BY: – CT

DATE: – 03/21/17

NOTES:

SEE SPECS. 2573 & 3887.

1. CURTAIN EXTENDS TO 1 FT. MAXIMUM FROM BOTTOM OF WATER BODY.
2. FOR ANCHOR AND WEIGHT REQUIREMENTS, SEE SPEC. 2573.
3. IN AREAS WHERE THE PLAN CALLS FOR RIPRAP AT THE BRIDGE, A TEMPORARY ROCK BERM WILL BE USED TO PROVIDE ADDITIONAL PROTECTION. THE TEMPORARY ROCK BERM IS INCIDENTAL FOR WHICH NO DIRECT PAYMENT WILL BE MADE.
4. ON U.S. COAST GUARD OR OTHER MOTORIZED WATERWAYS, BUOYS ARE REQUIRED TO MARK THE ENDS AND SPECIAL AREAS FOR VISIBILITY. PLACE BUOYS AS REQUIRED FOR NAVIGATIONAL PURPOSES.
5. WATER DEPTH CAN BE 0 TO 10 FEET, 0 TO 11 FEET FOR TYPE MOVING WATER.
6. SILT CURTAIN HEIGHT INCLUDES MAXIMUM WAVE HEIGHT FOR WATER BODY.
7. KEEP AS CLOSE TO WORK AREA AS POSSIBLE.
8. SILT CURTAIN, ROCK BERM OR SHEET PILE AS REQUIRED TO CONTROL THE INFILTRATION OF SILT.
9. IF 6 INCHES OR LESS OF WATER, USE BALE BARRIERS, SEE SHEET 2.

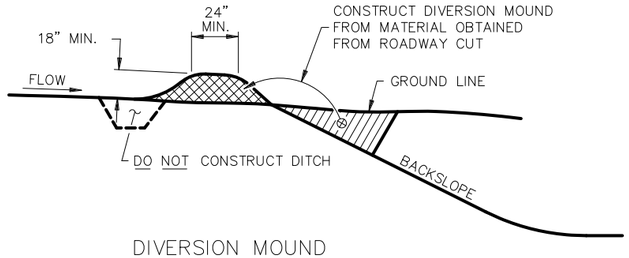
STANDARD SHEET NO. 5–297.405 (1 OF 4)
STANDARD APPROVED: MARCH 29, 2012

TITLE: TEMPORARY SEDIMENT CONTROL
SILT CURTAIN

S.A.P.062-636-008

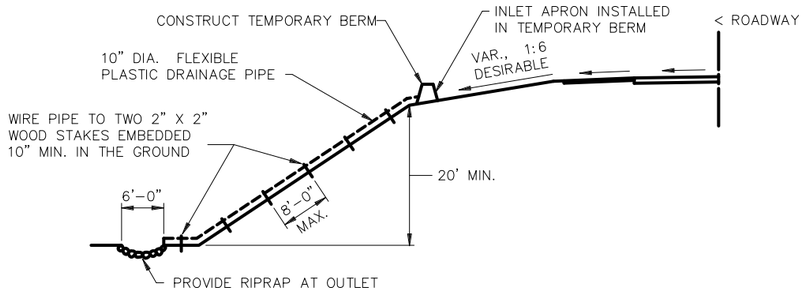
SHEET 7 OF 12 SHEETS

H:\PROJECTS\MAINTENANCE\P-XXXX WARNER WASHOUT\WARNER WASHOUT\BASE DWG\STANDARD PLANS.DWG September 9, 2013 10:40 AM



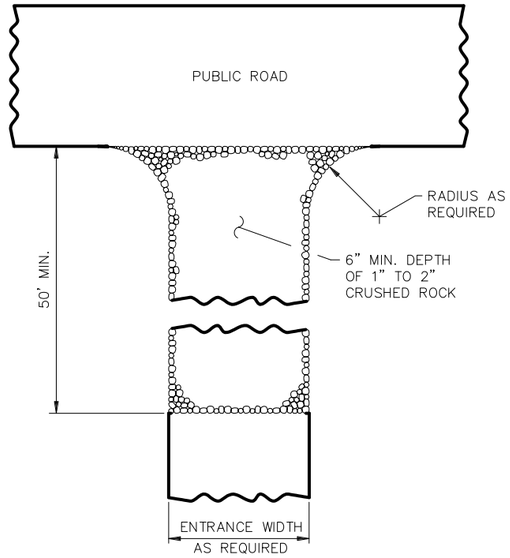
DIVERSION MOUND

DESIGN GUIDELINES:
STORM FREQUENCY: 10 YEAR – 24 HOUR
MAXIMUM DRAINAGE AREA: 5 ACRES
MAXIMUM DIVERSION: GRADE 5%

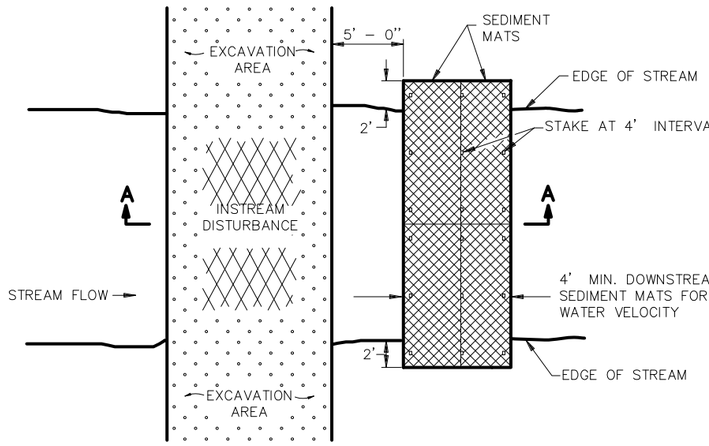


TEMPORARY DOWN DRAIN ON FILL SLOPE

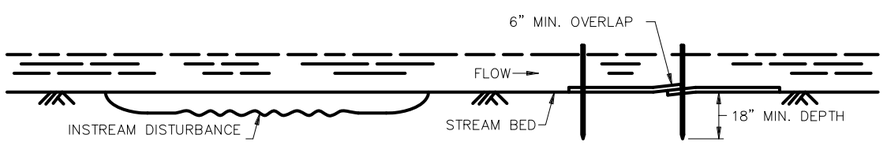
DESIGN GUIDELINES:
STORM FREQUENCY: 2 YEAR – 24 HOUR
MAXIMUM DRAINAGE AREA: 3 ACRES



ROCK CONSTRUCTION ENTRANCE ①



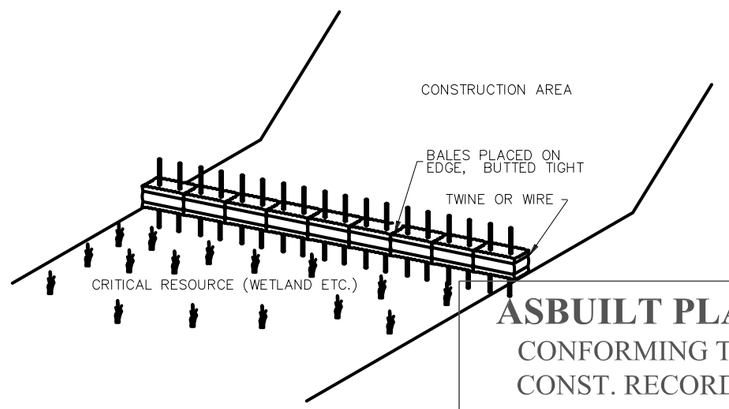
PLAN VIEW



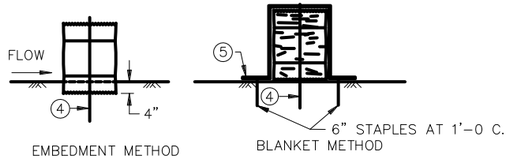
SECTION A–A

SEDIMENT MAT ⑥
TYPICAL STREAM BED INSTALLATION

DESIGN GUIDELINES:
MAXIMUM FLOW VELOCITY: 5 FT./SEC.
MAXIMUM FLOW DEPTH: 2 FT.



BALE BARRIERS
TO BE USED FOR CRITICAL PERIMETER CONTROL AREAS

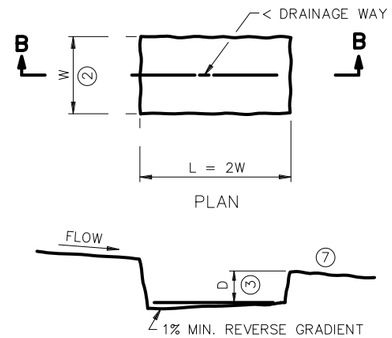


BALE BARRIER DETAIL
APPROX. BALE SIZE: 14" X 18" X 36" LONG

ASBUILT PLAN
CONFORMING TO CONST. RECORDS

DONE BY: – CT

DATE: – 03/21/17



SECTION B–B
SEDIMENT TRAP DETAIL

NOTES:
SEE SPECS. 2573, 3892, & 3894.

① ROCKS AT ENTRANCE CLEAN WORKSITE MUD OFF OF TRUCK TIRES BEFORE TRUCKS ENTER MAIN ROAD. KEEPING MUD OFF THE ROAD WILL PREVENT AUTO DAMAGE AND KEEP CONSTRUCTION SEDIMENT OUT OF DRAINAGE SYSTEMS AND WETLANDS. GEOTEXTILE MAY BE PLACED UNDER THE ROCK TO KEEP ROCKS SEPARATE FROM SOIL.

② W = 10 FT. MIN., 20 FT. MAX.

③ D = 2 FT.

④ TWO 2 IN. X 2 IN. WOOD STAKES OR REINFORCING BARS IN EACH BALE EMBEDDED 10 INCHES MINIMUM IN THE GROUND.

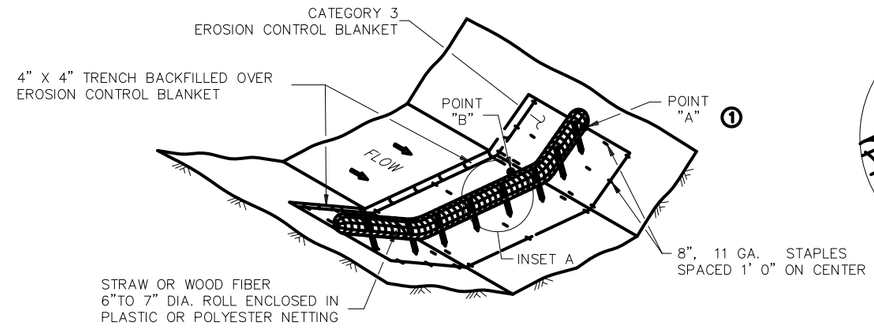
⑤ PLACE A CATEGORY 3 EROSION CONTROL BLANKET, 6 FT. WIDE MINIMUM, OVER THE BALE INSTEAD OF TRENCHING.

⑥ THIS DETAIL MAY NOT BE ACCEPTABLE FOR WORK ON PUBLIC WATERS, SEE GENERAL PUBLIC WATERS PERMIT (GP) 2004–0001.

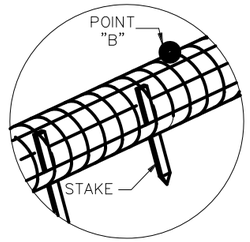
⑦ LOCATION OF DOWNSTREAM TEMPORARY SEDIMENT CONTROL DEVICE.

STANDARD SHEET NO.	TITLE:
5–297.405 (2 OF 4)	TEMPORARY SEDIMENT CONTROL MISCELLANEOUS DETAILS
STANDARD APPROVED: MARCH 29, 2012	
S.A.P.062–636–008	SHEET 8 OF 12 SHEETS

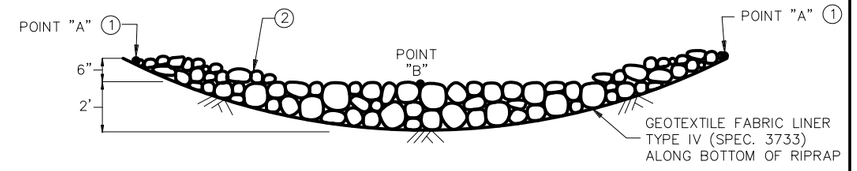
H:_CAD STANDARDS\BLOCKSIDETAILS\STANDARD PLAN SHEETS\TEMPORARY SEDIMENT CONTROL SHEET 2.DWG September 9, 2013 9:54 AM



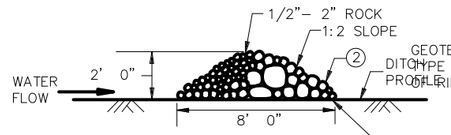
TYPE 3: BIOROLL BLANKET SYSTEM DITCH CHECK



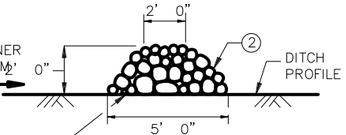
INSET A



CROSS SECTION (ROCK WEEPER AND ROCK CHECK)



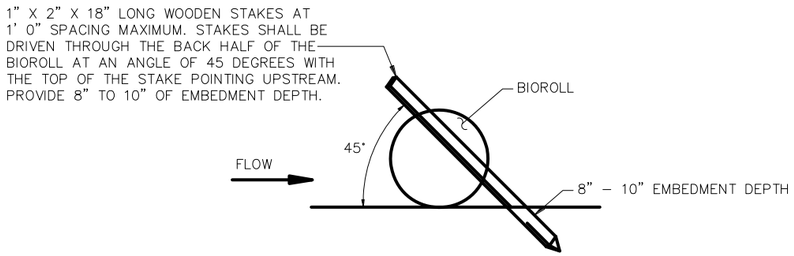
TYPE 5: ROCK WEEPER
PROFILE VIEW ③



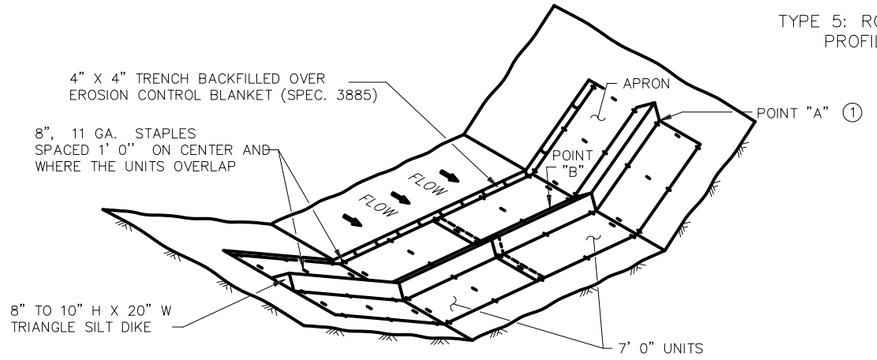
TYPE 7: ROCK CHECK
PROFILE VIEW

TYPE 5: ROCK WEEPER AND
TYPE 7: ROCK CHECK DITCH CHECKS ④

USE ON ROUGH GRADED AREAS



BIOROLL STAKING DETAIL

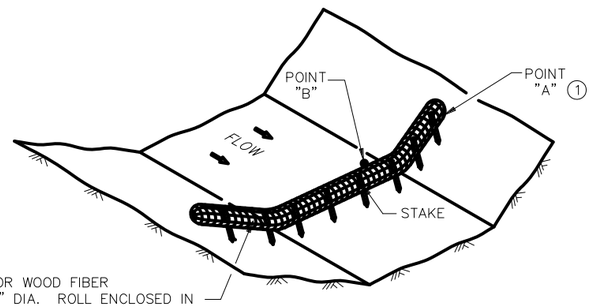


TYPE 6: GEOTEXTILE TRIANGULAR DIKE DITCH CHECK

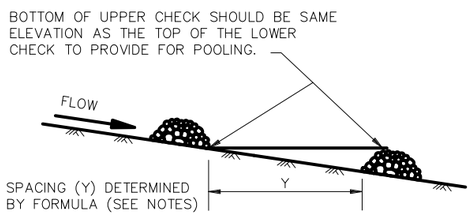
ASBUILT PLAN
CONFORMING TO
CONST. RECORDS

DONE BY: – CT

DATE: – 03/21/17

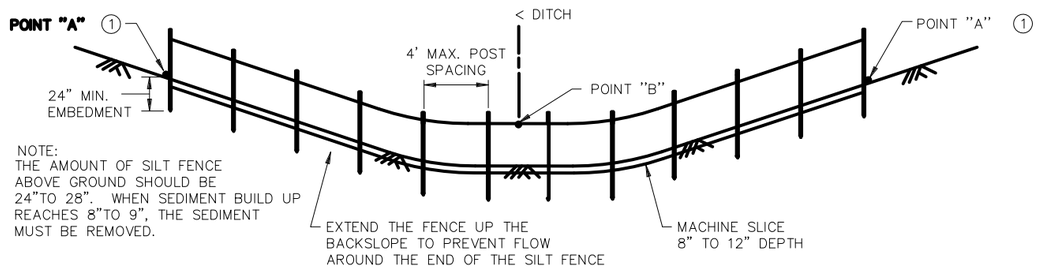


TYPE 2: BIOROLL DITCH CHECK
USE ON ROUGH GRADED AREAS



DITCH CHECK SPACING ④

GENERAL DESIGN GUIDELINES						
DITCH CHECK TYPE	SILT FENCE	BIOROLL	BIOROLL BLANKET	TRIANGULAR DIKE	ROCK WEEPER	ROCK CHECK
STORM FREQUENCY: MAX. FLOW VELOCITY: MAX. DITCH GRADE: MAX. DRAINAGE AREA:	2 YR. – 24 HR. < 1 FT./SECOND 0% – 0.5% 1 ACRE	2 YR. – 24 HR. 1.5 FT./SECOND 1.5% – 3% 2 ACRE	2 YR. – 24 HR. 4.5 FT./SECOND 1.5% – 3% 2 ACRE	2 YR. – 24 HR. 1.5 FT./SECOND 1.5% – 2.0% 4 ACRE	5 YR. – 24 HR. 12 FT./SECOND 3% – 5% 4+ ACRE	5 YR. – 24 HR. 12 FT./SECOND 3% – 5% 4+ ACRE



TYPE 1: SLICED IN SILT FENCE DITCH CHECK

NOTES:

SEE SPECS. 2573, 3601, 3733, 3885, 3886 & 3889.

APPROXIMATE SPACING BETWEEN EACH DITCH CHECK SHOULD BE DETERMINED FROM THE FOLLOWING SPACING FORMULA:

$$\text{APPROXIMATE SPACING OF DITCH CHECKS (FT.)} = Y = \frac{\text{DITCH CHECK HEIGHT (FT)}}{\text{\% CHANNEL SLOPE}} \times 100$$

① POINT "A" MUST BE A MINIMUM OF 6 INCHES HIGHER THAN POINT "B" TO ENSURE THAT WATER FLOWS OVER THE DIKE AND NOT AROUND THE ENDS.

② CLASS I – IV RIPRAP (SPEC. 3601) WITH GEOTEXTILE FABRIC LINER, TYPE IV (SPEC. 3733).

③ THE ROCK WEEPER FILTERS SEDIMENT OUT OF THE WATER BETTER THAN THE OTHER DITCH CHECKS. THE ROCK WEEPER COULD BE USED AS A PERMANENT WATER FILTERING FEATURE.

④ PERMANENT ROCK DITCH CHECKS PLACED WITHIN THE CLEAR ZONE WILL NEED TO BE 18" OR LESS IN HEIGHT. A 1:6 APPROACH AND DEPARTURE SLOPE SHALL BE PROVIDED.

STANDARD SHEET NO.
5-297.405 (3 OF 4)
STANDARD APPROVED:
MARCH 29, 2012

TEMPORARY SEDIMENT CONTROL
DITCH CHECK/BARRIER

S.A.P.0692-636-008

SHEET 9 OF 12 SHEETS

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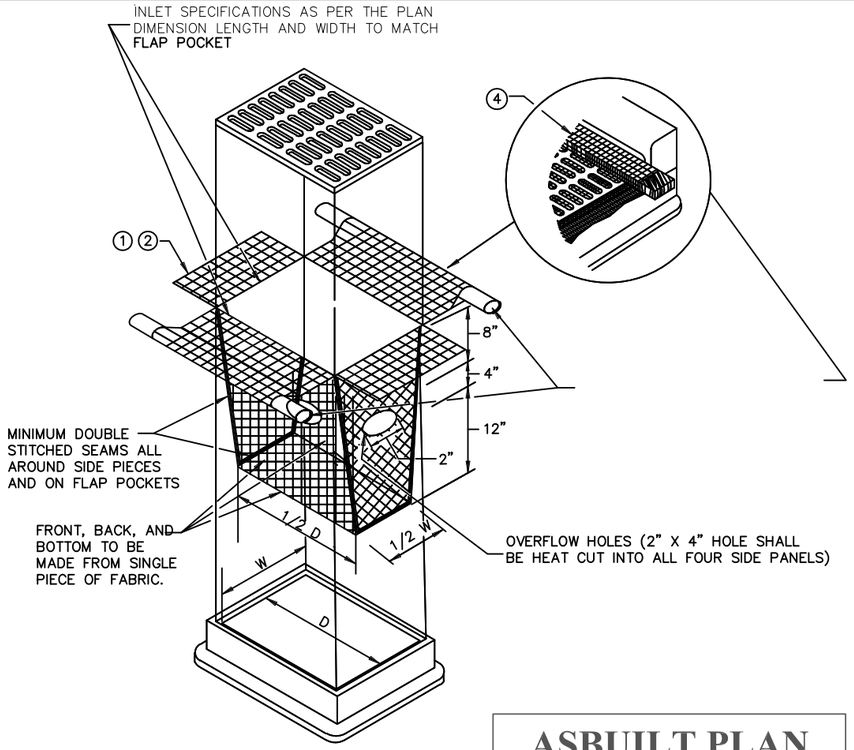
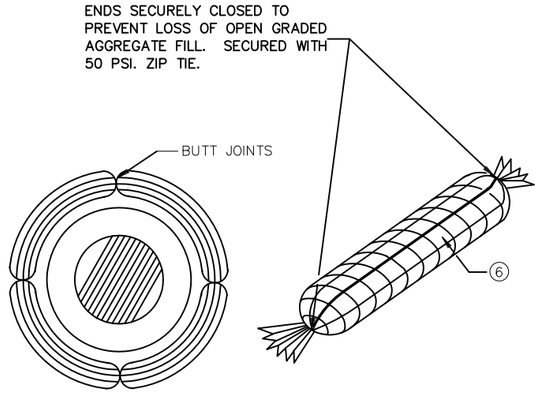
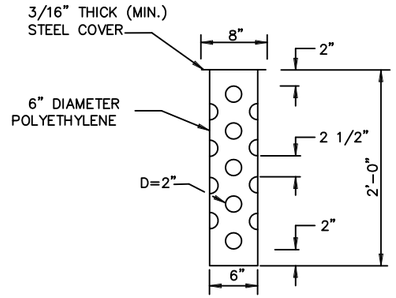


FILTER BAG INSERT ③

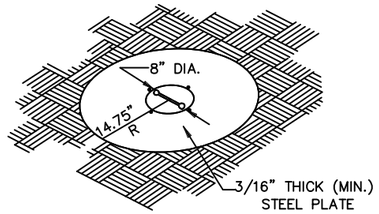
(CAN BE INSTALLED IN ANY INLET TYPE
WITH OR WITHOUT A CURB BOX)



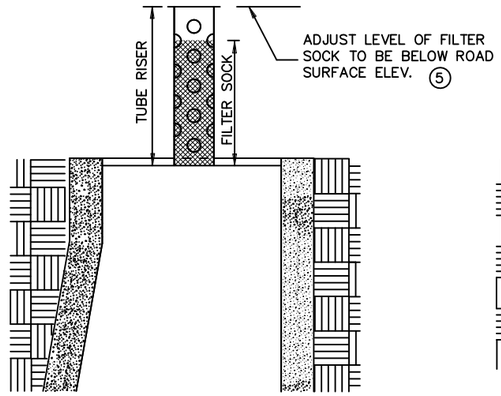
ROCK LOG/COMPOST LOG



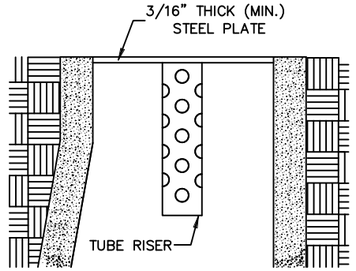
TUBE RISER



PERSPECTIVE VIEW

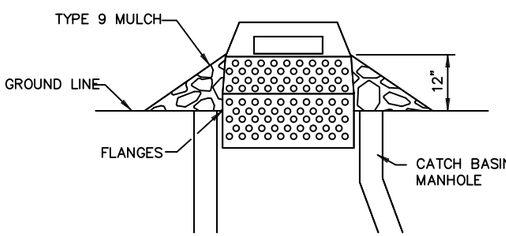


SECTION
(UP POSITION)



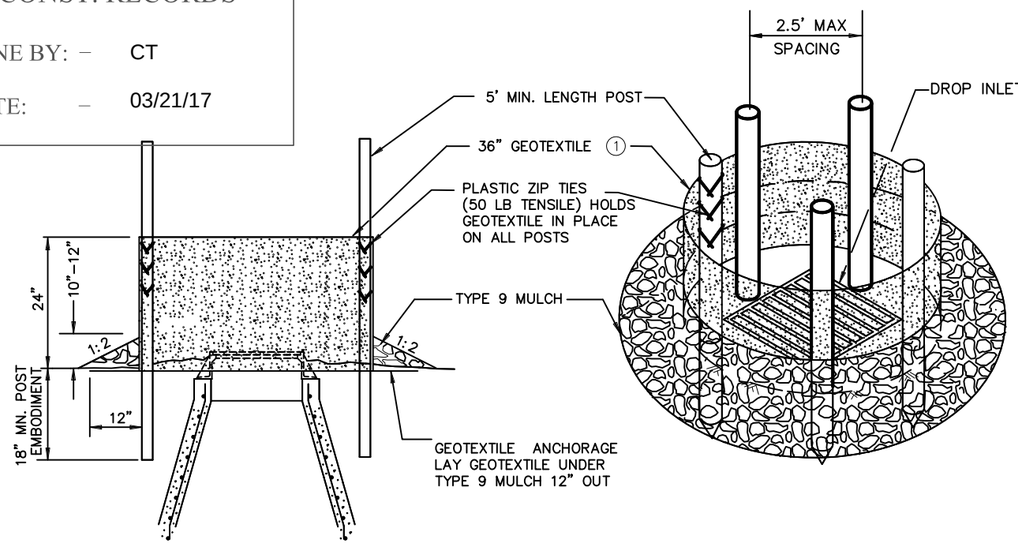
SECTION
(DOWN POSITION)

POP-UP HEAD



SEDIMENT CONTROL INLET HAT

NOTE:
THE SEDIMENT CONTROL BARRIER SHALL BE A METAL
OR PLASTIC/POLYETHYLENE RISER SIZED TO FIT INSIDE
THE CATCH BASIN/MANHOLE; HAVE PERFORATIONS TO ALLOW
FOR WATER INFILTRATION; HAVE AN OVERFLOW OPENING,
FLANGES AND A LID/COVER.



SILT FENCE RING AND ROCK FILTER BERM

USE WHERE INLET DRAINS IN AN AREA WITH SLOPES AT 1:3 or LESS

NOTES:
SEE SPECS. 2573, 3137, 3886 & 3891.

MANUFACTURED ALTERNATIVES LISTED ON Mn/DOT'S APPROVED PRODUCTS LIST MAY BE SUBSTITUTED.

1. ALL GEOTEXTILE USED FOR INLET PROTECTION SHALL BE MONOFILAMENT IN BOTH DIRECTIONS, MEETING SPEC. 3886.
2. FINISHED SIZE, INCLUDING POCKETS WHERE REQUIRED SHALL EXTEND A MINIMUM OF 10 INCHES AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
3. INSTALLATION NOTES:
DO NOT INSTALL FILTER BAG INSERT IN INLETS SHALLOWER THAN 30 INCHES, MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE. THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE OF 3 INCHES BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES. WHERE NECESSARY THE CONTRACTOR SHALL CLINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3 INCH SIDE CLEARANCE.
4. FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2 INCH X 4 INCH OR USE A ROCK SOCK OR SAND BAGS IN PLACE OF THE FLAP POCKETS.
5. SOCK HEIGHT MUST NOT BE SO HIGH AS TO SLOW DOWN WATER FILTRATION TO CAUSE FLOODING OF THE ROADWAY.
6. GEOTEXTILE SOCK BETWEEN 4-10 FEET LONG AND 4-6 INCH DIAMETER. SEAM TO BE JOINED BY TWO ROWS OF STITCHING WITH A PLASTIC MESH BACKING OR PROVIDE A HEAT BONDED SEAM (OR APPROVED EQUIVALENT). FILL ROCK LOG WITH OPEN GRADED AGGREGATE CONSISTING OF SOUND DURABLE PARTICLES OF COARSE AGGREGATE CONFORMING TO SPEC. 3137 TABLE 3137-1; CA-3 GRADATION.

ASBUILT PLAN
CONFORMING TO
CONST. RECORDS

DONE BY: – CT

DATE: – 03/21/17

STANDARD SHEET NO.	TITLE:
297.405 (4 OF 4)	TEMPORARY SEDIMENT CONTROL STORM DRAIN INLET PROTECTION
STANDARD APPROVED: MARCH 29, 2012	
S.A.P.062-636-008	SHEET 10 OF 12 SHEETS

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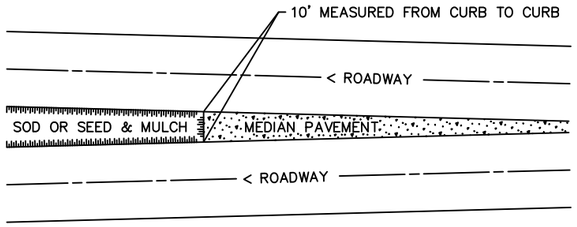
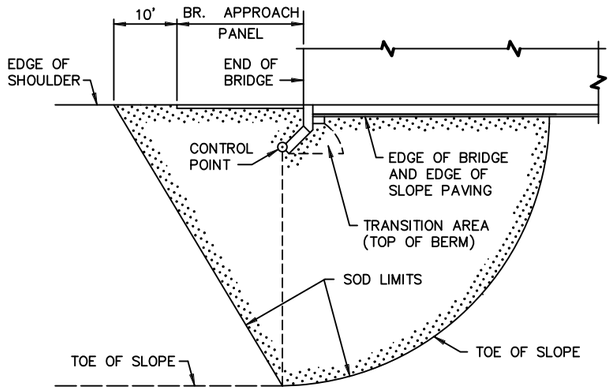
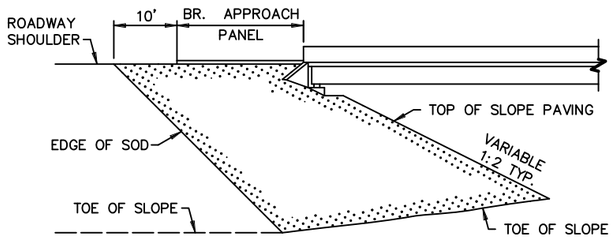


SODDING LIMITS AT GORE AREA

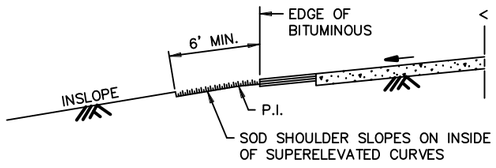


PLAN

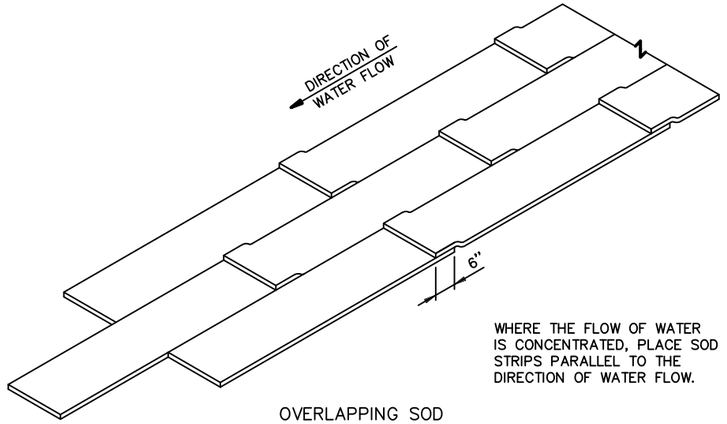


ELEVATION

SODDING LIMITS AT BRIDGE APPROACH FILLS

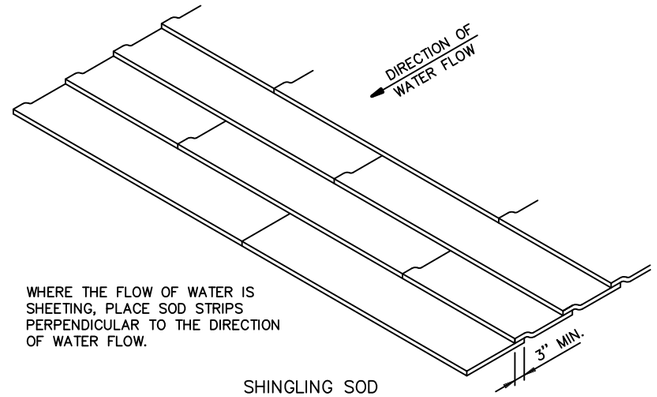


SODDING INSLOPES OF SUPERELEVATED CURVES



OVERLAPPING SOD

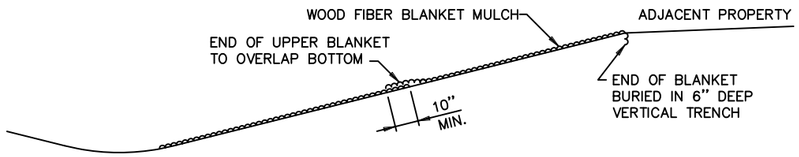
WHERE THE FLOW OF WATER IS CONCENTRATED, PLACE SOD STRIPS PARALLEL TO THE DIRECTION OF WATER FLOW.



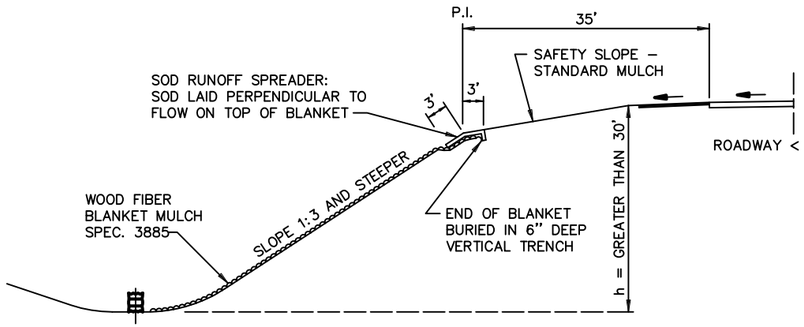
SHINGLING SOD

WHERE THE FLOW OF WATER IS SHEETING, PLACE SOD STRIPS PERPENDICULAR TO THE DIRECTION OF WATER FLOW.

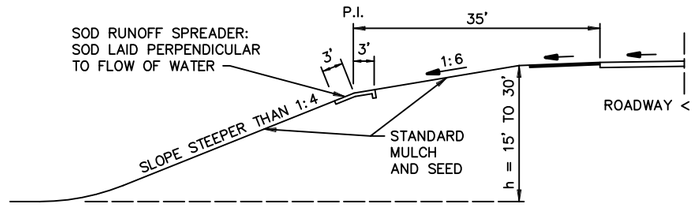
SPECIAL SOD PLACEMENT TECHNIQUES



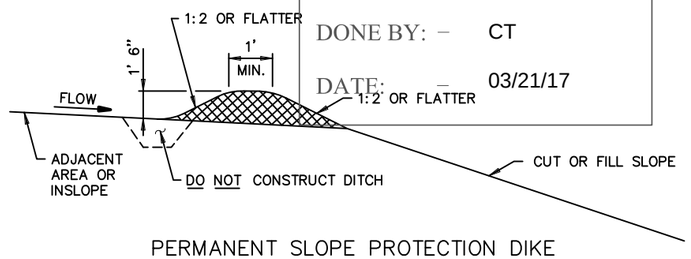
WOOD FIBER BLANKET INSTALLATION ON A CUT SLOPE



WOOD FIBER BLANKET INSTALLATION ON AN INSLOPE
(WHEN REQUIRED)



BROKEN–BACK SAFETY FILL SLOPE



PERMANENT SLOPE PROTECTION DIKE

ASBUILT PLAN
CONFORMING TO CONST. RECORDS
DONE BY: – CT
DATE: – 03/21/17

REVISION DATE
10–26–2000

STANDARD SHEET NO. 5–297.406	TITLE: PERMANENT EROSION CONTROL ALONG ROADWAYS AND AT GORE AREAS & BRIDGE APPROACH FILLS
STANDARD APPROVED: JANUARY 31, 1985	
S.A.P.062-636-008	SHEET 11 OF 12 SHEETS

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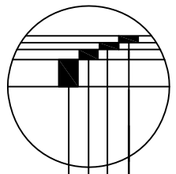
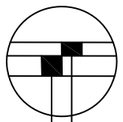
INSET A

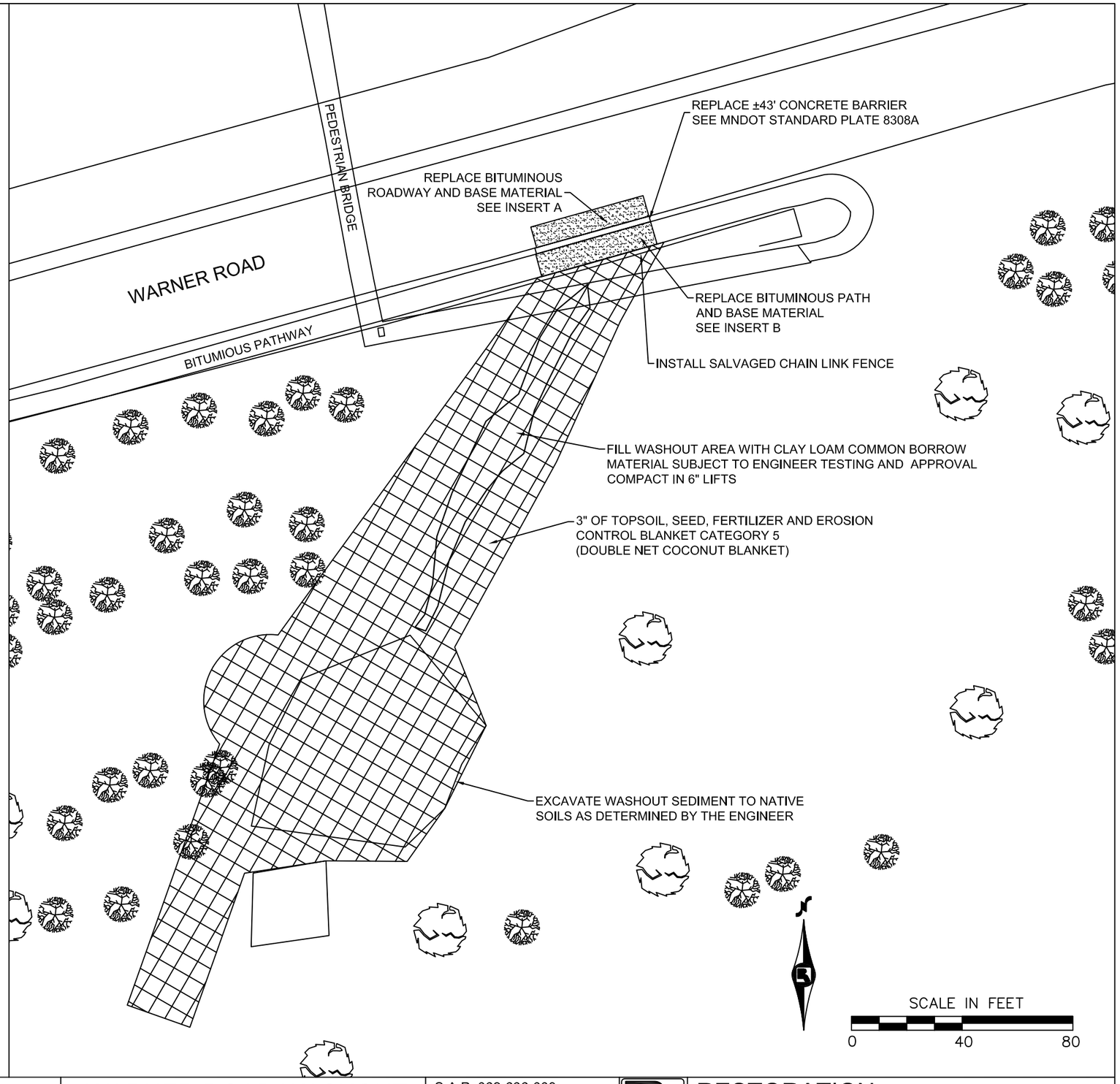


BITUMINOUS TACK COAT BETWEEN BIT. COURSES MN/DOT SPEC. 2357
2" - 2360 BITUMINOUS WEARING COURSE MIXTURE SPWEB440B
2" - 2360 BITUMINOUS WEARING COURSE MIXTURE SPWEB440B
3" - 2360 BITUMINOUS WEARING COURSE MIXTURE SPWB440B
6" - AGGREGATE BASE CLASS 6 MN/DOT SPEC. 3138

INSET B



4" 2360 BITUMINOUS WEARING COURSE MIXTURE SPWEB440B
6" AGGREGATE BASE CLASS 6 MN/DOT SPEC. 3138



ASBUILT PLAN
CONFORMING TO
CONST. RECORDS

DONE BY: – CT

DATE: – 03/21/17

H:\PROJECTS\MAINTENANCE\P--XXXX WARNER WASHOUT\WARNER WASHOUT\BASE DWG\RESTORATION.DWG September 9, 2013 11:28 AM

NO.	REV-DATE	BY:	DESCRIPTION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

SIGNED: _____

REG NO: _____ DATE: _____

WARNER ROAD WASHOUT

500 FT. WEST OF HIGHWAY 61

S.A.P. 062-636-008

COUNTY PROJ. SO36E

RAMSEY COUNTY

RESTORATION

SHEET 12 OF 12 SHEETS

RAMSEY COUNTY PUBLIC WORKS

WARNER ROAD CMP WASHOUT

S.A.P. 062-636-008

WARNER ROAD 500 FT WEST OF HIGHWAY 61

RAMSEY COUNTY
DEPARTMENT OF PUBLIC WORKS

CONSTRUCTION PLAN FOR TRAFFIC CONTROL, REMOVAL AND PLACEMENT OF STORM SEWER AND RESTORATION.

WARNER ROAD

WARNER ROAD TO 500 FT. WEST OF HWY 61 .....STORM SEWER

PLAN SYMBOLS

STATE LINE
COUNTY LINE
TOWNSHIP OR RANGE LINE
SECTION LINE
QUARTER LINE
SIXTEENTH LINE
EXISTING RIGHT OF WAY LINE
PROPOSED RIGHT OF WAY LINE
PROPERTY LINE
CORPORATE OR CITY LIMITS
RAILROAD
RAILROAD RIGHT-OF-WAY
RIVER OF CREEK
CULVERT
GUARDRAIL
WOOD FENCE
BARBED WIRE FENCE
WOVEN WIRE FENCE
CHAIN LINK FENCE
TIMBER WALL
STONE WALL
HEDGE
RAILROAD CROSSING SIGN
CROSSING GATE
MEANDER CORNER
SLOPE EASEMENT (CONST. LIMITS)
MARSH
DECIDUOUS TREE
CONIFEROUS TREE
BUSH OR SHRUB
WOODS
CATCH BASIN
BRIDGE
IRON PIPE OR ROD
MONUMENT (STONE, CONCRETE OR METAL)
WOODEN HUB

UTILITY SYMBOLS

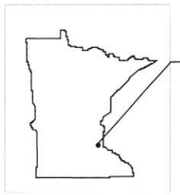
UTILITY POLE
GUY OR ANCHOR
STREET LIGHT
TELEPHONE PEDESTAL
GAS MAIN
WATER MAIN
TELEPHONE VAULT
ELECTRIC VAULT
TELEPHONE CABLE
ELECTRIC CABLE
STORM SEWER
SANITARY SEWER
SEWER MANHOLE
GATE VALVE
CONTROLLER CABINET
EXISTING HYDRANT
CABLE TELEVISION-BURIED
FIBER OPTIC CABLE
TRAFFIC SIGNAL LINE
TRAFFIC SIGNAL HAND HOLE

FOR PLANS AND UTILITIES SYMBOLS SEE MN/DOT TECHNICAL MANUAL.

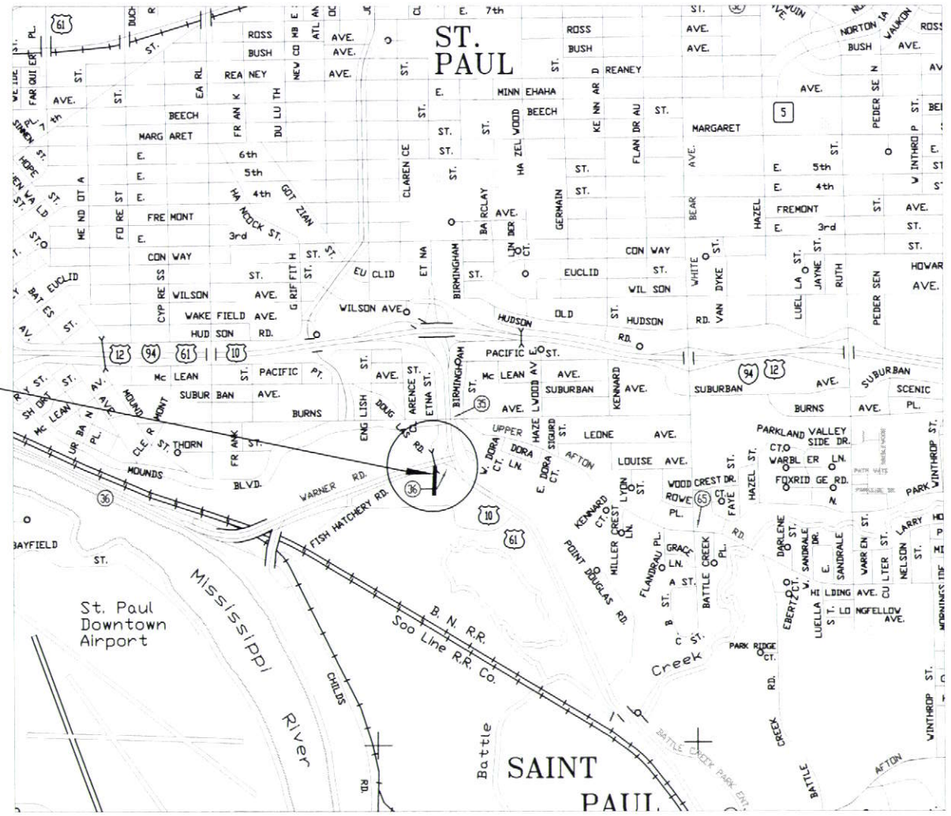
SCALES IN FEET

PLAN 0 10 20 30 40

INDEX MAP 0 1250 2500



PROJECT LOCATION
RAMSEY COUNTY
METRO DISTRICT



WARNER ROAD WASHOUT
S.A.P. 062-636-008

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	ESTIMATED QUANTITIES / CONSTRUCTION NOTES
3	REMOVALS
4	PLAN
5	PROFILE
6-11	DETAILS AND STANDARD PLANS
12	RESTORATION

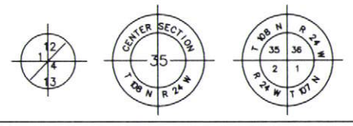
THIS PLAN CONTAINS 12 SHEETS

-GOVERNING SPECIFICATIONS-

THE 2005 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS AND ORDINANCES WILL BE COMPLIED WITH IN THE CONSTRUCTION OF THIS PROJECT.



DESIGN DESIGNATION — MARYLAND AVENUE

PRESENT ADT (2013)	21,000
PROJECTED ADT (2033)	24,200
FUNCTIONAL CLASS	MINOR ARTERIAL
TRAFFIC LANES	4
PARKING LANES	0
DESIGN SPEED (MPH)	50
TON DESIGN	10

BASED ON STOPPING DISTANCE
HEIGHT OF EYE: 3.50 FEET
HEIGHT OF OBJECT: 2.0 FEET

PLAN REVISIONS		
DATE	SHEET NO. & DESCRIPTION	BY

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

Nicklaus Fischer LIC. NO. 50791 DATE 9/10/13
NICKLAUS FISCHER

APPROVED _____ DATE 9/10/13
RAMSEY COUNTY ENGINEER

APPROVED _____ DATE 9/12/13
CITY OF ST. PAUL

MINNESOTA DEPARTMENT OF TRANSPORTATION

Julie Brasel DATE 9/16/13
DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE WITH STATE-AID RULES/POLICY

For Julie Brasel DATE 9/16/13
APPROVED FOR STATE AID FUNDING: STATE AID ENGINEER

DRAWN BY ANDREW MEIDL DATE 9-4-2013
CHECKED BY NICKLAUS FISCHER DATE 9-4-2013

H:\PROJECTS\Maintenance\P-XXXX Warner washout\Warner Washout\Base DWG\TITLE SHEET.dwg August 1, 2013

ITEM NUMBER	ITEM	UNIT	TOTAL ESTIMATED QUANTITY	COUNTY STORM SEWER	NOTES
2021.501	MOBILIZATION	LS	1		
2104.501	REMOVE SEWER PIPE (STORM)	LF	168		
2104.501	REMOVE CONCRETE BARRIER	LF	43		
2104.503	REMOVE BITUMINOUS WALK	SF	364		
2104.505	REMOVE BITUMINOUS PAVEMENT	SY	5		2
2104.513	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	LF	41		1
2104.521	SALVAGE CHAIN LINK FENCE	LF	43		
2105.501	COMMON EXCAVATION (EV)	CY	165		
2105.523	COMMON BORROW (CV) (P)	CY	165		
2105.525	TOPSOIL BORROW (LV)	CY	148		
2123.610	STREET SWEEPER (WITH PICKUP BROOM)	HOUR	10		2
2123.610	TRACTOR BACKHOE	HOUR	10		2
2211.503	AGGREGATE BASE, CLASS 6 (CV) (P)	CY	13		2
2357.502	BITUMINIOUS MATERIAL FOR TACK COAT	GALLON	4		
2360.501	TYPE SP 12.5 WEARING COURSE MIXTURE (4,B)	TON	24		3
2451.507	GRANULAR BEDDING (LV)	CY	71	71	
2501.515	30" RC PIPE APRON	EACH	1	1	
2501.517	A-S DIAPHRAGM FOR 15" HDPE PIPE	EACH	10	10	2
2501.602	TRASH GUARD FOR 30" RC PIPE APRON	EACH	1	1	2
2503.511	HDPE 15" PIPE	LF	225	225	2
2503.541	30" RC PIPE SEWER DES 3006 CL V	LF	112	112	2
2503.602	CONNECT INTO EXISTING DRAINAGE STRUCTURE	EACH	1	1	2
2506.501	CONST DRAINAGE STRUCTURE DES 48-4020	LF	9.7	10	
2506.501	CONST DRAINAGE STRUCTURE DES 60-4020	LF	13.8	14	2,4
2511.501	RANDOM RIPRAP CLASS IV	CY	22	22	2
2533.501	CONC MED BARRIER DES 8303 TYPE A	LF	43		
2557.501	WIRE FENCE DESIGN 60V-9322	LF	43		
2563.601	TRAFFIC CONTROL	LS	1		2
2573.530	INLET PROTECTION	EACH	2		
2573.540	FILTER LOG TYPE COMPOST	LF	450		
2573.550	EROSION CONTROL SUPERVISOR	LS	1		
2575.502	SEED MIXTURE 340	LB	44		
2575.523	EROSION CONTROL BLANKET CATEGORY 5	SY	1781		
2575.532	FERTILIZER TYPE 3	LB	110		

BASIS FOR ESTIMATED QUANTITIES

2360 MIXES	– BITUMINOUS MIXTURES – 115 LBS PER 1" THICKNESS PER SQ. YD.
2357.502	– BITUMINOUS MATERIAL FOR TACK COAT ESTIMATED AT 0.05 GAL. PER SQ. YD. PER APPLICATION
2575.532	– FERTILIZER APPLICATION RATE 300 LBS/ACRE
2575.502	– SEED APPLICATION RATE 120 LBS/ACRE

QUANTITY NOTES

1. SAWCUT SHALL BE FULL DEPTH
2. SEE SPECIAL PROVISIONS
3. MATCH EXISTING BITUMINOUS DEPTH
4. MATERIALS AND INSTALLATION OF 11 GAUGE STAINLESS STEEL SCOUR PLATE WITH STAINLESS STEEL BOLTS/FIXTURES INCIDENTAL TO THIS ITEM

CONSTRUCTION NOTES

WATER, GAS, ELECTRIC,TELEPHONE, SEWER, AND T.V. CABLE LINES SHOWN ON THE DRAWINGS AND CROSS–SECTIONS ARE PLOTTED FROM THE BEST INFORMATION AVAILABLE AT THE TIME OF PLAN PREPARATION, BUT MAY NOT REFLECT ACTUAL LOCATIONS OR ELEVATIONS. THE CONTRACTOR SHALL VERIFY LOCATION OF ALL UTILITIES BEFORE BEGINNING CONSTRUCTION WHICH MAY BE AFFECTED BY A UTILITY CONFLICT. THE CONTRACTOR SHALL GIVE 48 HOURS NOTICE TO THE OWNERS OF ALL KNOWN UTILITIES BEFORE STARTING ANY OPERATIONS AFFECTING THOSE PROPERTIES, OR BEGINNING EXCAVATION IN THE VICINITY OF THOSE PROPERTIES. THE CONTRACTORS ATTENTION IS DIRECTED TO SECTION 1507 IN THE STANDARD SPECIFICATIONS. UTILITY COMPANIES WILL RELOCATE THEIR FACILITIES CONCURRENTLY WITH THE CONSTRUCTION OPERATIONS UNDER THIS CONTRACT. CONTRACTOR SHALL SCHEDULE CONSTRUCTION IN COOPERATION WITH UTILITY RELOCATION.

EXCESS EXCAVATED AND UNSUITABLE MATERIALS AS DETERMINED BY THE ENGINEER SHALL BE DISPOSED OF IN ACCORDANCE WITH THE REQUIREMENTS OF 2104.3C3 AND 2105.3D

COMPACTION IN GRADING ITEMS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH SPEC. 2105.3F2 "QUALITY COMPACTION METHOD".

COMPACTION OF BITUMINOUS SURFACE ITEMS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH SPEC. 2360.6B "ORDINARY COMPACTION METHOD."

WHEN EXCAVATING ADJACENT TO INPLACE PAVEMENT, NO MATERIAL SHALL BE REMOVED FROM INSIDE AN APPROXIMATE 2:1 SLOPED LINE DRAWN DOWNWARD AND OUTWARD FROM THE BOTTOM OF THE INPLACE PAVEMENT.

WHEN CONNECTION TO EXISTING BITUMINOUS PAVEMENT IS REQUIRED, THE EDGE OF EXISTING PAVEMENT SHALL BE CUT TO A NEAT LINE AND TACK COAT APPLIED PRIOR TO CONSTRUCTING ASPHALT SURFACING.

STABILIZING AGGREGATE SHALL BE APPLIED IF NECESSARY TO ACHIEVE SATISFACTORY SURFACE STABILITY AS DETERMINED BY THE ENGINEER. THE MATERIAL SHALL SATISFY THE REQUIREMENTS OF SECTION 3149.2C AND SHALL BE APPLIED IN ACCORDANCE WITH SECTION 2105.3G OF THE STANDARD SPECIFICATIONS.

COMPACTION OF AGGREGATE BASE SHALL BE ACCOMPLISHED BY THE "QUALITY COMPACTION METHOD"

THE CONTRACTOR SHALL CONTACT GOPHER STATE ONE CALL FOR EXISTING UTILITY LOCATIONS PRIOR TO ANY EXCAVATION.

PROVIDE FOR REMOVAL AND DISPOSAL (OUTSIDE THE CONSTRUCTION ZONE) OF ALL INPLACE STRUCTURES THAT WILL INTERFERE WITH CONSTRUCTION. DISPOSAL OF ITEMS REMOVED UNDER THIS CONTRACT SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF 2104.3C3.

STANDARD PLATES	
THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION, SHALL APPLY ON THIS PROJECT	
3000L	REINFORCED CONCRETE PIPE (5 SHEETS)
3006G	GASKET JOINT FOR RCP PIPE (2 SHEETS)
3100G	CONCRETE APRON FOR CONCRETE PIPE
3133C	RIPRAP AT RCP OUTLETS
3145G	CONCRETE PIPE OR PRECAST BOX CULVERT TIES
3146C	ANTI SEEPAGE DIAPHRAM
4020J	MANHOLE OR CATCH BASIN FOR USE WITH OR WITHOUT TRAFFIC LOADS (SHEETS 2)
4101D	CATCH BASIN GRATE FRAME CASTING (FOR SQUARE GRATE)
4108F	ADJUSTMENT RINGS FOR CATCH BASINS AND MANHOLES
7111J	INSTALLATION OF CATCH BASIN CASTINGS
8308A	REINFORCED CONCRETE MEDIAN BARRIER TYPE F (NON-GLARE SCREENTYPE) GENERAL CONSTRUCTION NOTES & END ANCHORAGE
9322K	CHAIN LINK FENCE (2 SHEETS)

NO.	REV-DATE	BY:	DESCRIPTION

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SIGNED: Millissa Fischer
REG NO: 50791 DATE: 9/12/2013

WARNER ROAD WASHOUT
500 FT. WEST OF HIGHWAY 61

S.A.P. 062-636-008
COUNTY PROJ. SO36E

RAMSEY COUNTY

QUANTITIES AND NOTES
SHEET 2 OF 12 SHEETS

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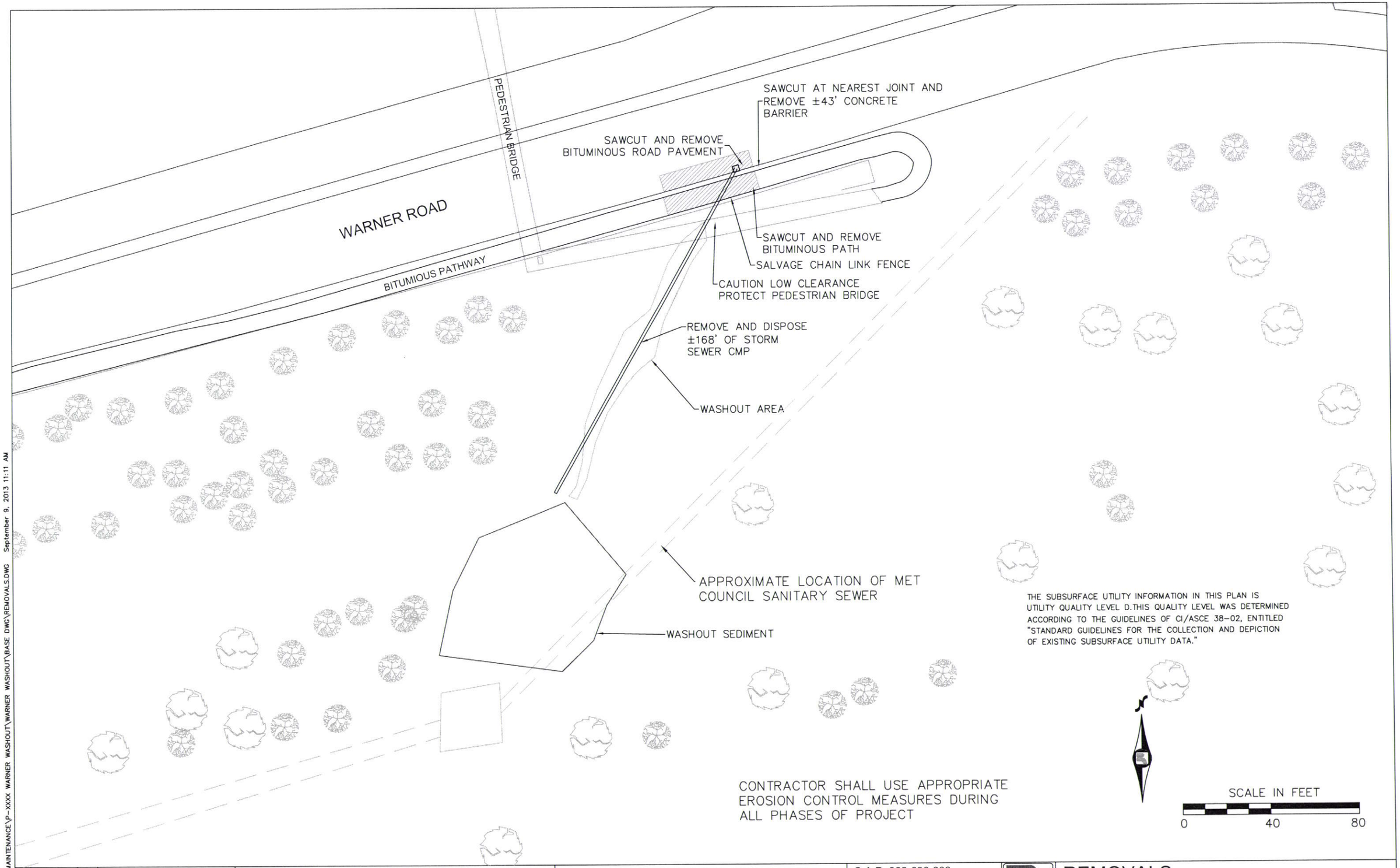

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SIGNED: Matthew Fischer

REG NO: 50791 DATE: 9/12/2013

WARNER ROAD WASHOUT

500 FT. WEST OF HIGHWAY 61

S.A.P. 062-636-008

COUNTY PROJ. SO36E

RAMSEY COUNTY

REMOVALS

SHEET 3 OF 12 SHEETS

EX CB 1
ALIGN = WARNER WASHOUT
STA = 0+12.85, OFFSET = 0.0'
RIM = 801.31
FRAME = EXISTING
BOTTOM OF STRUCTURE=797.41
INV OUT=797.41 (15") - SW

PEDESTRIAN BRIDGE

WARNER ROAD

BITUMIOUS PATHWAY

CONNECT TO EXISTING
STORM SEWER

23'-15" HDPE @ 8.33%

SD-2 48-4020
ALIGN = WARNER WASHOUT
STA = 0+35.89, OFFSET = 0.0'
RIM = 799.99
FRAME = R-2564
BOTTOM OF STRUCTURE=789.40
INV IN = 795.49 (15") - NE
INV OUT=789.40 (15") - SW

202'-15" HDPE @ 30.00%
HDPE PIPE FUSED JOINTS WITH
ANTI SEEPAGE DIAPHRAGMS
EVERY 20 FEET

MH-3 60-4020
ALIGN = WARNER WASHOUT
STA = 2+29.84, OFFSET = 0.0'
RIM = 743.52
FRAME = R-1733B
BOTTOM OF STRUCTURE=728.84
INV IN = 731.21 (15") - NE
INV OUT=728.84 (30") - S

112'-30" RCP @ 0.50%
RC PIPE TIED

APPROXIMATE LOCATION OF MET
COUNCIL SANITARY SEWER

APRON-4 30in RC PIPE APRON W-TRASH GUARD
ALIGN = WARNER WASHOUT
STA = 3+41.41, OFFSET = 0.0'
OUTLET = 728.28 (30")

22 CUBIC YARDS OF RANDOM RIPRAP CLASS IV
GEOTEXTILE FABRIC CLASS IV
SEE STANDARD PLATE 3133C
GOETEXTILE SHALL BE INCIDENTAL TO RANDOM RIPRAP

SCALE IN FEET
0 40 80

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SIGNED: Nicholas Fischer
REG NO: 50791 DATE: 9/12/2013

WARNER ROAD WASHOUT

500 FT. WEST OF HIGHWAY 61

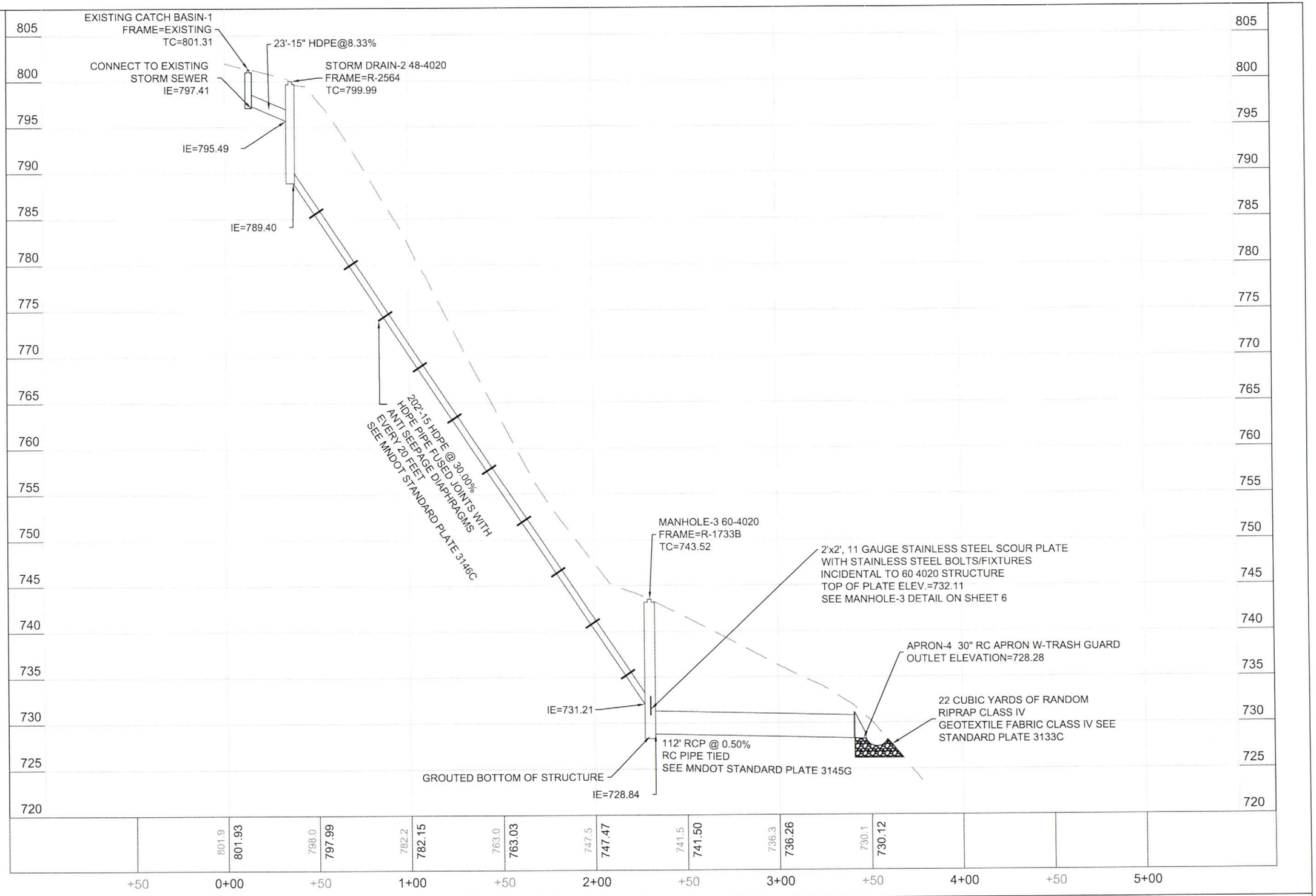
S.A.P. 062-636-008

COUNTY PROJ. SO36E

RAMSEY COUNTY

PLAN LAYOUT

SHEET 4 OF 10 SHEETS



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SIGNED: Nicholas Fischer

REG NO: 50791 DATE: 9/12/2013

WARNER ROAD WASHOUT

500 FT. WEST OF HIGHWAY 61

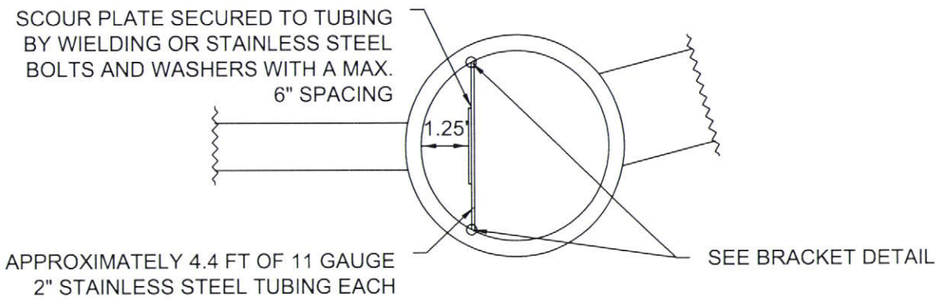
S.A.P. 062-636-008

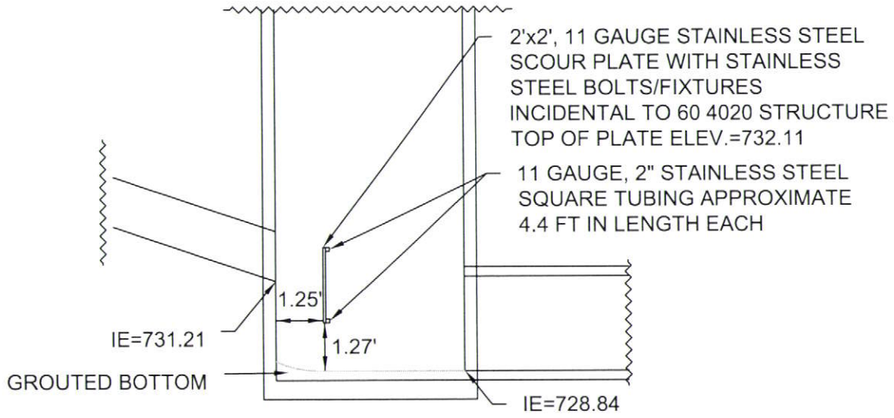
COUNTY PROJ. SO36E

RAMSEY COUNTY

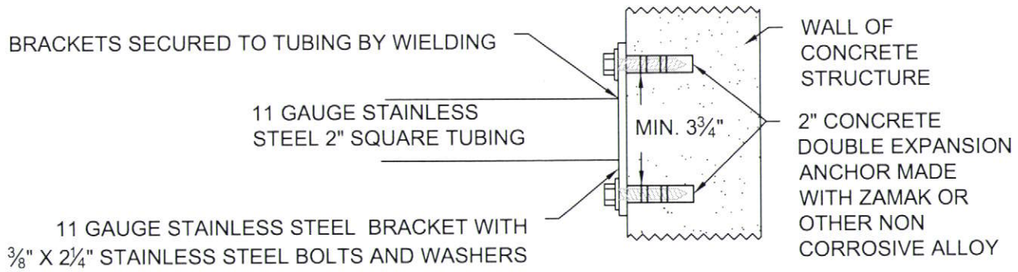
STORM PROFILE

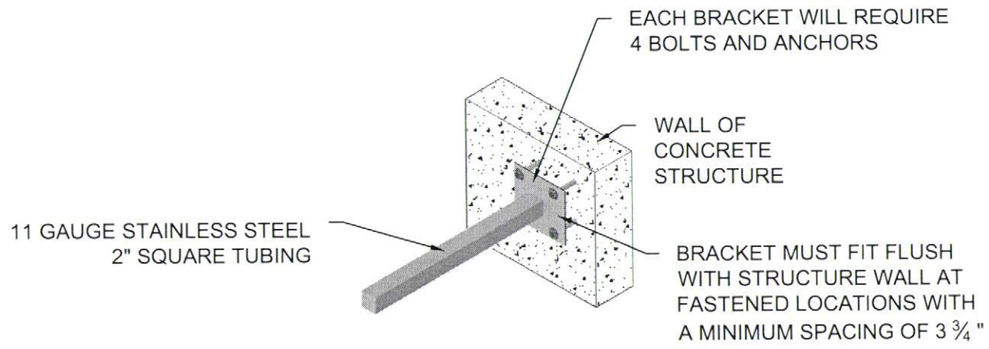
SHEET 5 OF 12 SHEETS





MANHOLE-3 60 4020 DETAIL





BRACKET DETAIL

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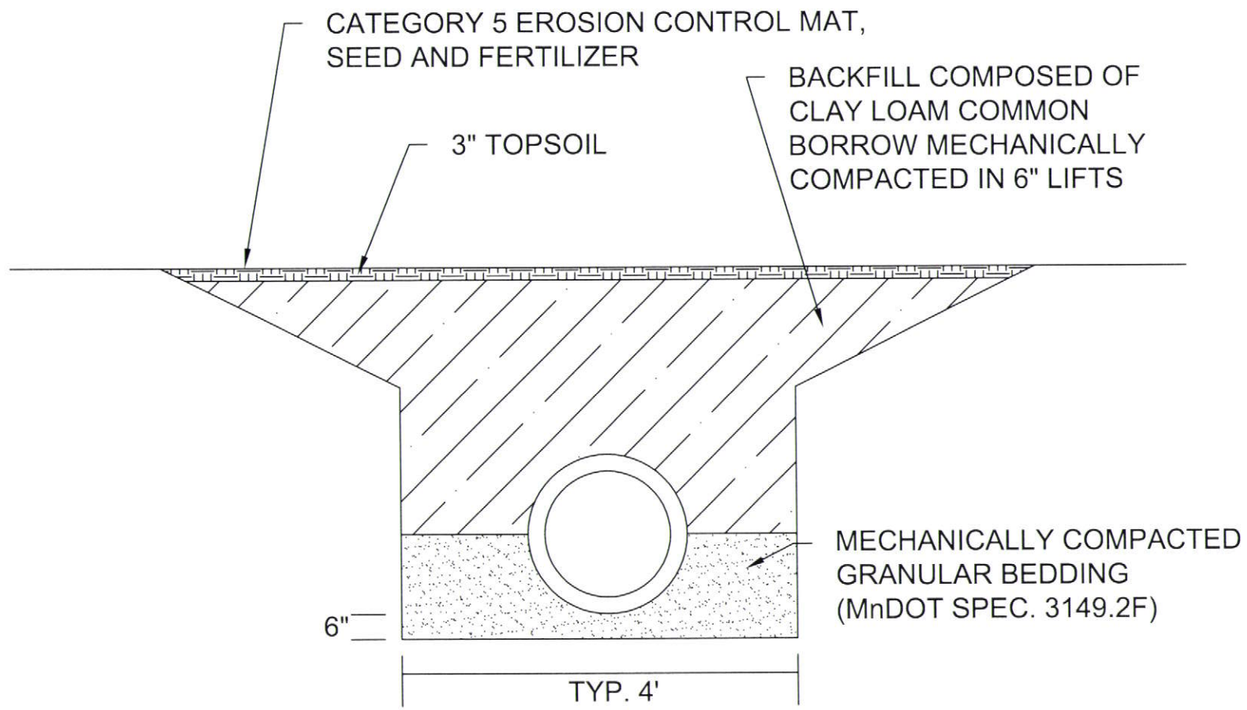
SIGNED: Nicholas J Foster
REG NO: 50791 DATE: 9/12/2013

WARNER ROAD WASHOUT
500 FT. WEST OF HIGHWAY 61

S.A.P. 062-636-008
COUNTY PROJ. SO36E

RAMSEY COUNTY

DETAILS
SHEET 6 OF 12 SHEETS



PIPE BEDDING DETAIL

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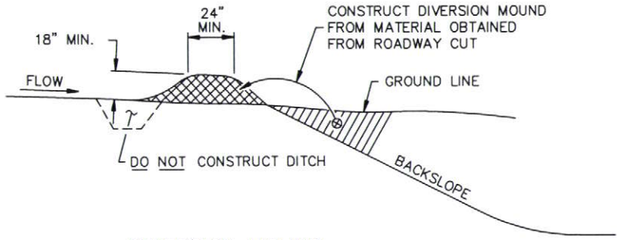
SIGNED: Matthew Fischer
REG NO: 50791 DATE: 9/12/2013

WARNER ROAD WASHOUT
500 FT. WEST OF HIGHWAY 61

S.A.P. 062-636-008
COUNTY PROJ. SO36E

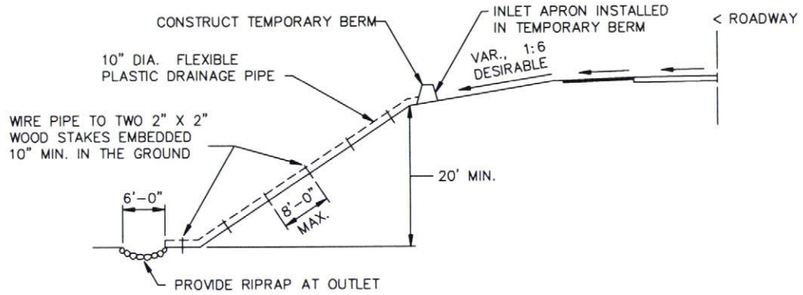
RAMSEY COUNTY

DETAILS
SHEET 7 OF 12 SHEETS



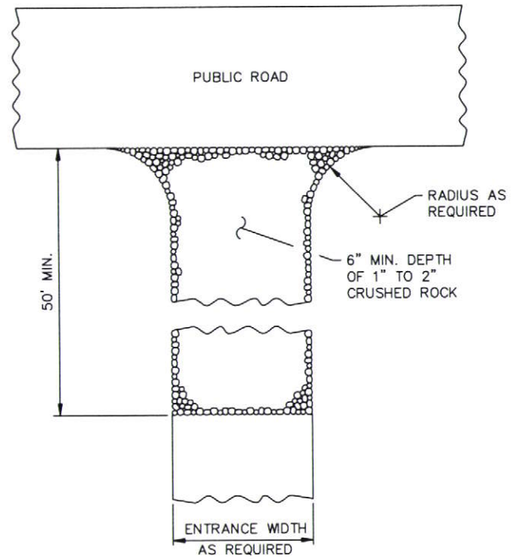
DIVERSION MOUND

DESIGN GUIDELINES:
STORM FREQUENCY: 10 YEAR – 24 HOUR
MAXIMUM DRAINAGE AREA: 5 ACRES
MAXIMUM DIVERSION: GRADE 5%

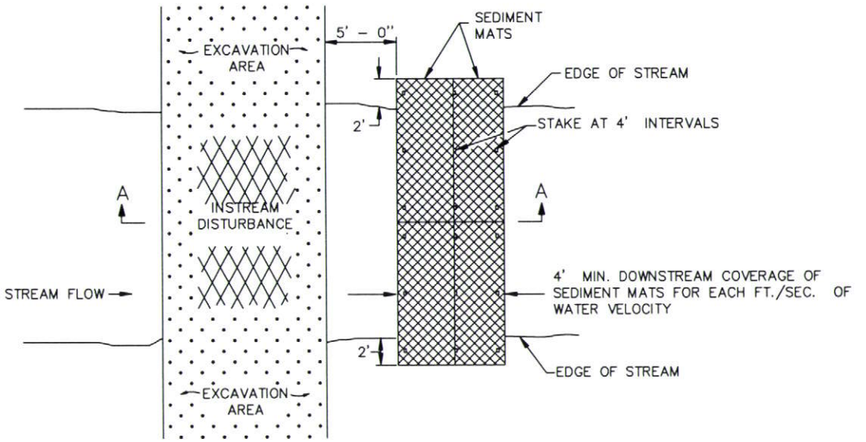


TEMPORARY DOWN DRAIN ON FILL SLOPE

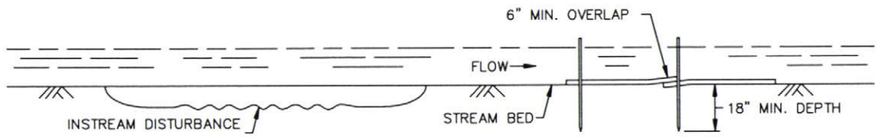
DESIGN GUIDELINES:
STORM FREQUENCY: 2 YEAR – 24 HOUR
MAXIMUM DRAINAGE AREA: 3 ACRES



ROCK CONSTRUCTION ENTRANCE ①



PLAN VIEW

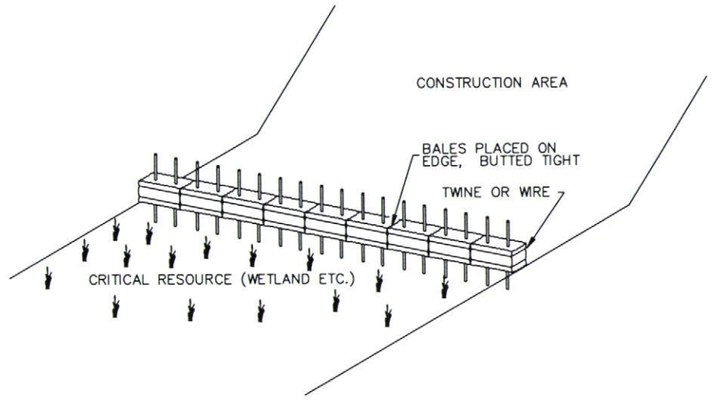


SECTION A–A

SEDIMENT MAT ⑥

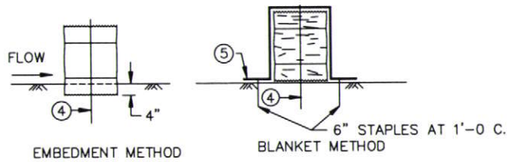
TYPICAL STREAM BED INSTALLATION

DESIGN GUIDELINES:
MAXIMUM FLOW VELOCITY: 5 FT./SEC.
MAXIMUM FLOW DEPTH: 2 FT.

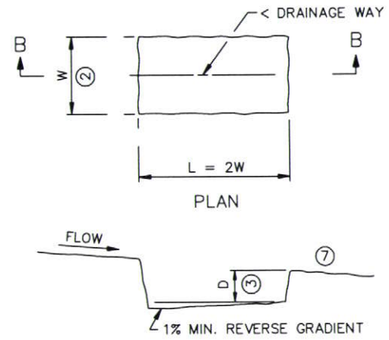


BALE BARRIERS

TO BE USED FOR CRITICAL PERIMETER CONTROL AREAS



BALE BARRIER DETAIL
APPROX. BALE SIZE: 14" X 18" X 36" LONG



PLAN

SECTION B–B

SEDIMENT TRAP DETAIL

NOTES:
SEE SPECS. 2573, 3892, & 3894.

① ROCKS AT ENTRANCE CLEAN WORKSITE MUD OFF OF TRUCK TIRES BEFORE TRUCKS ENTER MAIN ROAD. KEEPING MUD OFF THE ROAD WILL PREVENT AUTO DAMAGE AND KEEP CONSTRUCTION SEDIMENT OUT OF DRAINAGE SYSTEMS AND WETLANDS. GEOTEXTILE MAY BE PLACED UNDER THE ROCK TO KEEP ROCKS SEPARATE FROM SOIL.

② W = 10 FT. MIN., 20 FT. MAX.

③ D = 2 FT.

④ TWO 2 IN. X 2 IN. WOOD STAKES OR REINFORCING BARS IN EACH BALE EMBEDDED 10 INCHES MINIMUM IN THE GROUND.

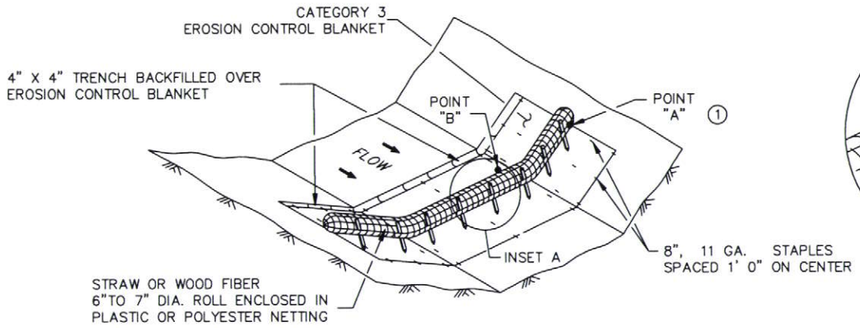
⑤ PLACE A CATEGORY 3 EROSION CONTROL BLANKET, 6 FT. WIDE MINIMUM, OVER THE BALE INSTEAD OF TRENCHING.

⑥ THIS DETAIL MAY NOT BE ACCEPTABLE FOR WORK ON PUBLIC WATERS, SEE GENERAL PUBLIC WATERS PERMIT (GP) 2004–0001.

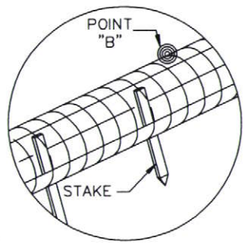
⑦ LOCATION OF DOWNSTREAM TEMPORARY SEDIMENT CONTROL DEVICE.

STANDARD SHEET NO: 5-297.405 (2 OF 4)	TITLE: TEMPORARY SEDIMENT CONTROL MISCELLANEOUS DETAILS
STANDARD APPROVED: MARCH 29, 2012	
S.A.P.062-636-008	SHEET 8 OF 12 SHEETS

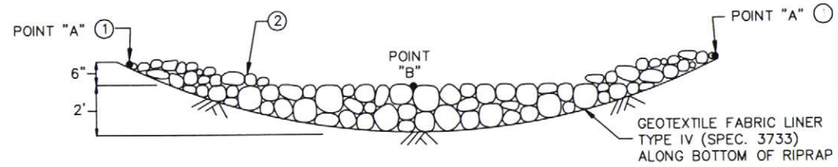
H:_CAD STANDARDS\BLOCKS\DETAILS\STANDARD PLAN SHEETS\TEMPORARY SEDIMENT CONTROL SHEET 2.DWG September 9, 2013 9:54 AM



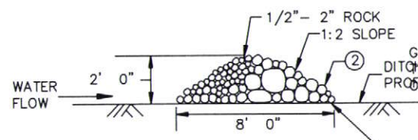
TYPE 3: BIOROLL BLANKET SYSTEM DITCH CHECK



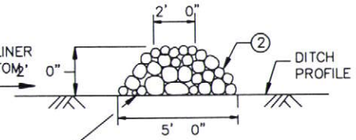
INSET A



CROSS SECTION (ROCK WEEPER AND ROCK CHECK)



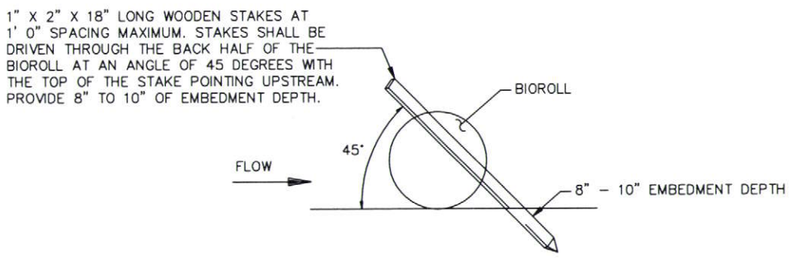
TYPE 5: ROCK WEEPER
PROFILE VIEW ③



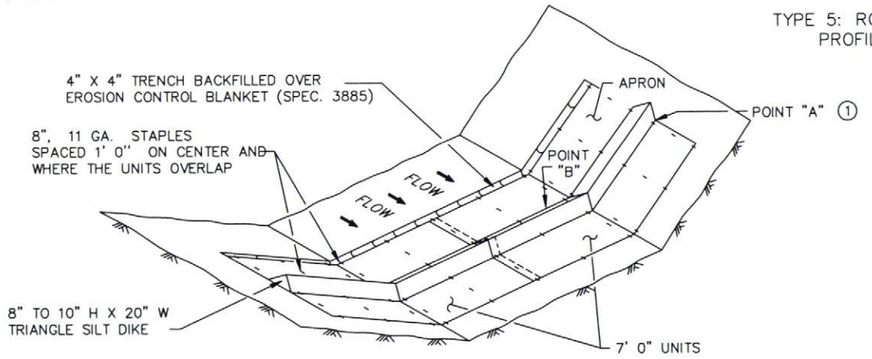
TYPE 7: ROCK CHECK
PROFILE VIEW

TYPE 5: ROCK WEEPER AND
TYPE 7: ROCK CHECK DITCH CHECKS ④

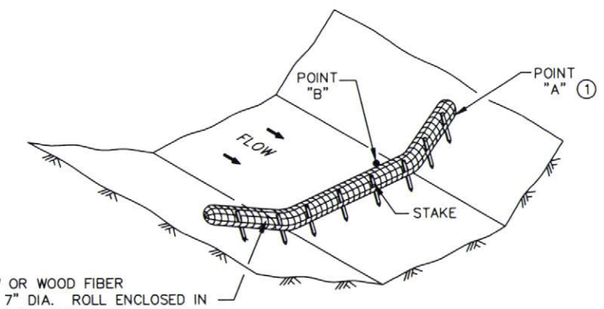
USE ON ROUGH GRADED AREAS



BIOROLL STAKING DETAIL

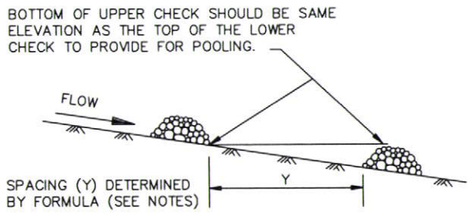


TYPE 6: GEOTEXTILE TRIANGULAR DIKE DITCH CHECK

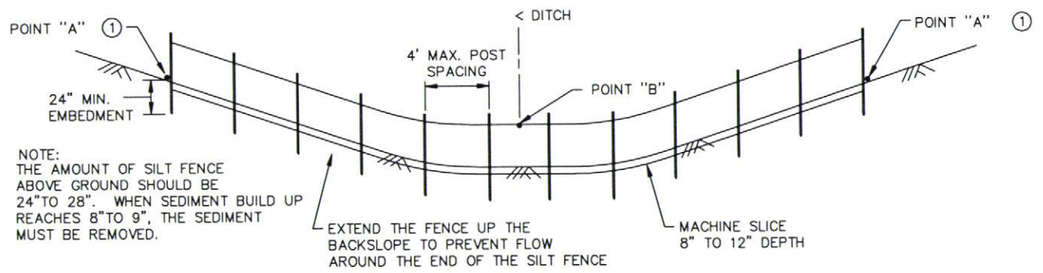


TYPE 2: BIOROLL DITCH CHECK

USE ON ROUGH GRADED AREAS



DITCH CHECK SPACING ④



TYPE 1: SLICED IN SILT FENCE DITCH CHECK

GENERAL DESIGN GUIDELINES						
DITCH CHECK TYPE	SILT FENCE	BIOROLL	BIOROLL BLANKET	TRIANGULAR DIKE	ROCK WEEPER	ROCK CHECK
STORM FREQUENCY: MAX. FLOW VELOCITY: MAX. DITCH GRADE: MAX. DRAINAGE AREA:	2 YR. – 24 HR. < 1 FT./SECOND 0% – 0.5% 1 ACRE	2 YR. – 24 HR. 1.5 FT./SECOND 1.5% – 3% 2 ACRE	2 YR. – 24 HR. 4.5 FT./SECOND 1.5% – 3% 2 ACRE	2 YR. – 24 HR. 1.5 FT./SECOND 1.5% – 2.0% 4 ACRE	5 YR. – 24 HR. 12 FT./SECOND 3% – 5% 4+ ACRE	5 YR. – 24 HR. 12 FT./SECOND 3% – 5% 4+ ACRE

NOTES:

SEE SPECS. 2573, 3601, 3733, 3885, 3886 & 3889.

APPROXIMATE SPACING BETWEEN EACH DITCH CHECK SHOULD BE DETERMINED FROM THE FOLLOWING SPACING FORMULA:

$$\text{APPROXIMATE SPACING OF DITCH CHECKS (FT.)} = Y = \frac{\text{DITCH CHECK HEIGHT (FT)}}{\text{\% CHANNEL SLOPE}} \times 100$$

① POINT "A" MUST BE A MINIMUM OF 6 INCHES HIGHER THAN POINT "B" TO ENSURE THAT WATER FLOWS OVER THE DIKE AND NOT AROUND THE ENDS.

② CLASS I – IV RIPRAP (SPEC. 3601) WITH GEOTEXTILE FABRIC LINER, TYPE IV (SPEC. 3733).

③ THE ROCK WEEPER FILTERS SEDIMENT OUT OF THE WATER BETTER THAN THE OTHER DITCH CHECKS. THE ROCK WEEPER COULD BE USED AS A PERMANENT WATER FILTERING FEATURE.

④ PERMANENT ROCK DITCH CHECKS PLACED WITHIN THE CLEAR ZONE WILL NEED TO BE 18" OR LESS IN HEIGHT. A 1:6 APPROACH AND DEPARTURE SLOPE SHALL BE PROVIDED.

STANDARD SHEET NO.
5-297.405 (3 OF 4)
STANDARD APPROVED:
MARCH 29, 2012

TEMPORARY SEDIMENT CONTROL
DITCH CHECK/BARRIER

S.A.P.0692-636-008

SHEET 9 OF 12 SHEETS

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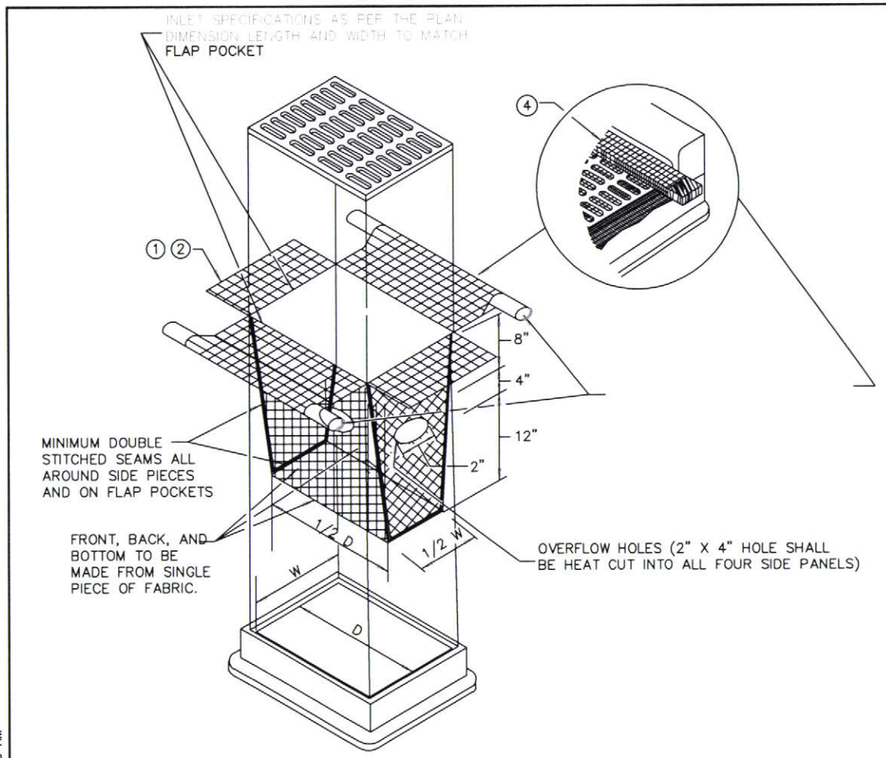
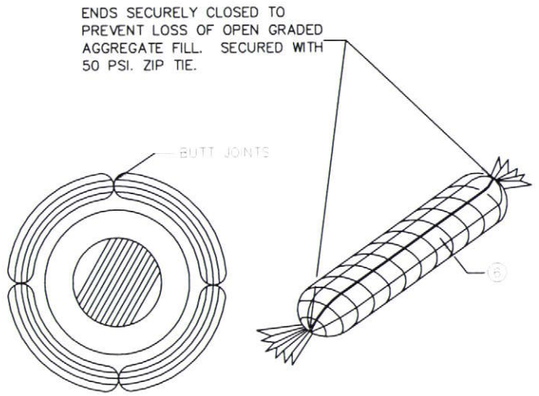
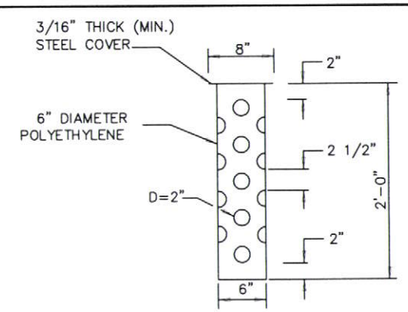


FILTER BAG INSERT ③

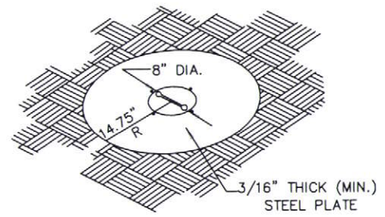
(CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT A CURB BOX)



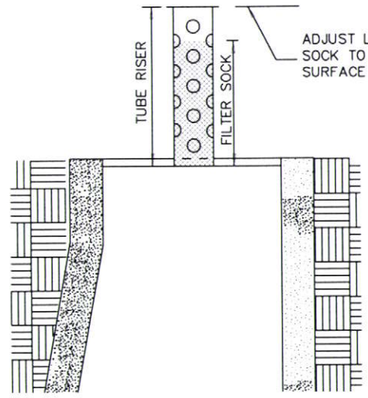
ROCK LOG/COMPOST LOG



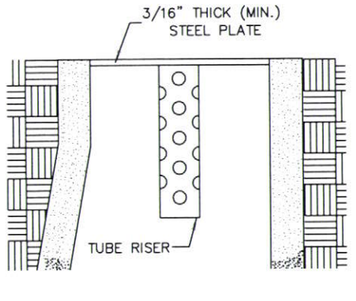
TUBE RISER



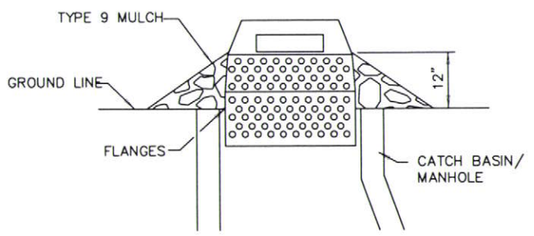
PERSPECTIVE VIEW



SECTION
(UP POSITION)

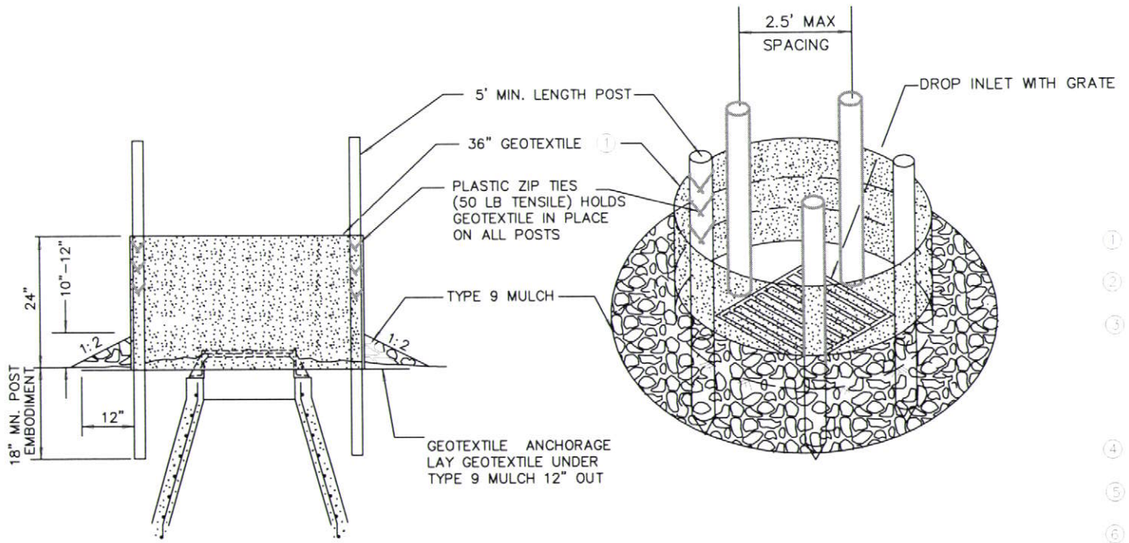


SECTION
(DOWN POSITION)



SEDIMENT CONTROL INLET HAT

NOTE:
THE SEDIMENT CONTROL BARRIER SHALL BE A METAL OR PLASTIC/POLYETHYLENE RISER SIZED TO FIT INSIDE THE CATCH BASIN/MANHOLE; HAVE PERFORATIONS TO ALLOW FOR WATER INFILTRATION; HAVE AN OVERFLOW OPENING, FLANGES AND A LID/COVER.



SILT FENCE RING AND ROCK FILTER BERM

USE WHERE INLET DRAINS IN AN AREA WITH SLOPES AT 1:3 or LESS

POP-UP HEAD

NOTES:
SEE SPECS. 2573, 3137, 3886 & 3891.

MANUFACTURED ALTERNATIVES LISTED ON Mn/DOT'S APPROVED PRODUCTS LIST MAY BE SUBSTITUTED.

① ALL GEOTEXTILE USED FOR INLET PROTECTION SHALL BE MONOFILAMENT IN BOTH DIRECTIONS, MEETING SPEC. 3886.

② FINISHED SIZE, INCLUDING POCKETS WHERE REQUIRED SHALL EXTEND A MINIMUM OF 10 INCHES AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.

③ INSTALLATION NOTES:
DO NOT INSTALL FILTER BAG INSERT IN INLETS SHALLOWER THAN 30 INCHES, MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE. THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE OF 3 INCHES BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES. WHERE NECESSARY THE CONTRACTOR SHALL CLINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3 INCH SIDE CLEARANCE.

④ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2 INCH X 4 INCH OR USE A ROCK SOCK OR SAND BAGS IN PLACE OF THE FLAP POCKETS.

⑤ SOCK HEIGHT MUST NOT BE SO HIGH AS TO SLOW DOWN WATER FILTRATION TO CAUSE FLOODING OF THE ROADWAY.

⑥ GEOTEXTILE SOCK BETWEEN 4-10 FEET LONG AND 4-6 INCH DIAMETER. SEAM TO BE JOINED BY TWO ROWS OF STITCHING WITH A PLASTIC MESH BACKING OR PROVIDE A HEAT BONDED SEAM (OR APPROVED EQUIVALENT). FILL ROCK LOG WITH OPEN GRADED AGGREGATE CONSISTING OF SOUND DURABLE PARTICLES OF COARSE AGGREGATE CONFORMING TO SPEC. 3137 TABLE 3137-1; CA-3 GRADATION.

STANDARD SHEET NO.	TITLE:
297.405 (4 OF 4)	TEMPORARY SEDIMENT CONTROL STORM DRAIN INLET PROTECTION
STANDARD APPROVED: MARCH 29, 2012	
S.A.P.062-636-008	SHEET 10 OF 12 SHEETS

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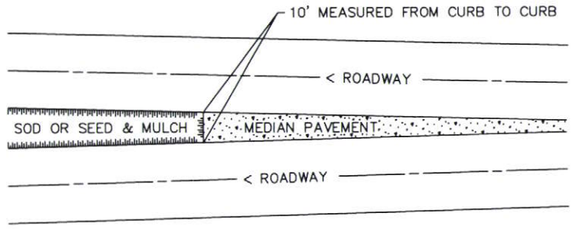
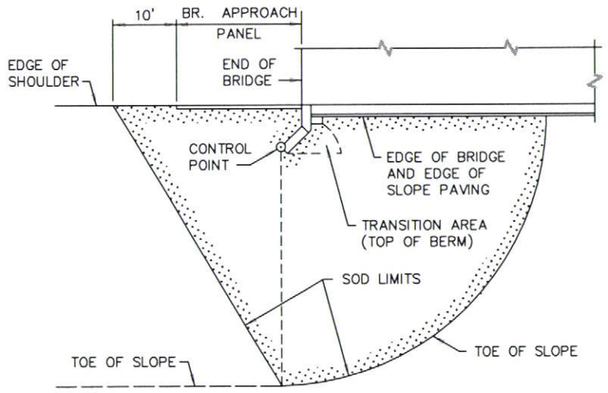
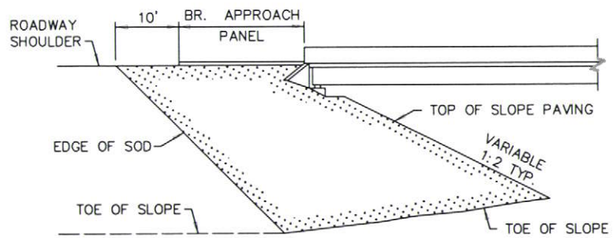


SODDING LIMITS AT GORE AREA

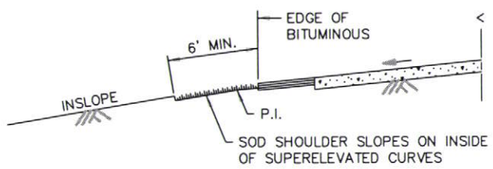


PLAN

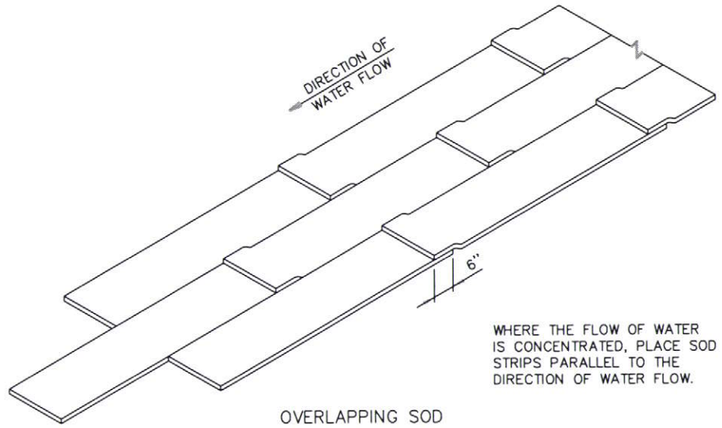


ELEVATION

SODDING LIMITS AT BRIDGE APPROACH FILLS

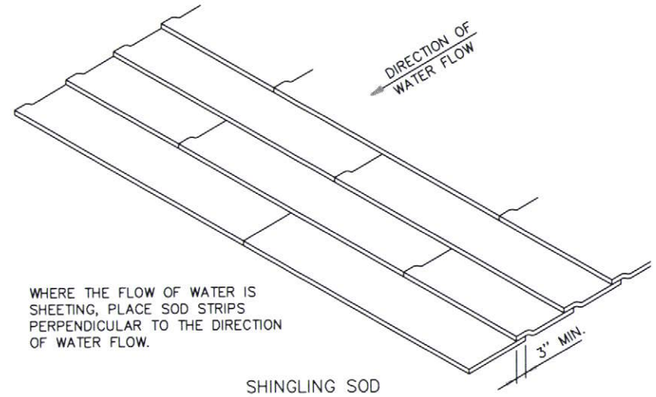


SODDING INSLOPES OF SUPERELEVATED CURVES



OVERLAPPING SOD

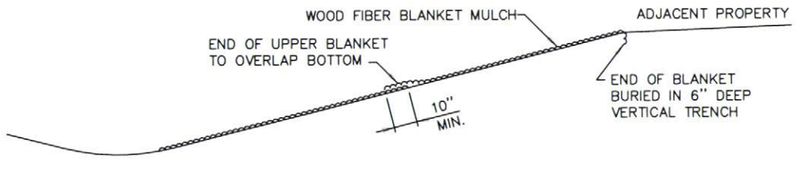
WHERE THE FLOW OF WATER IS CONCENTRATED, PLACE SOD STRIPS PARALLEL TO THE DIRECTION OF WATER FLOW.



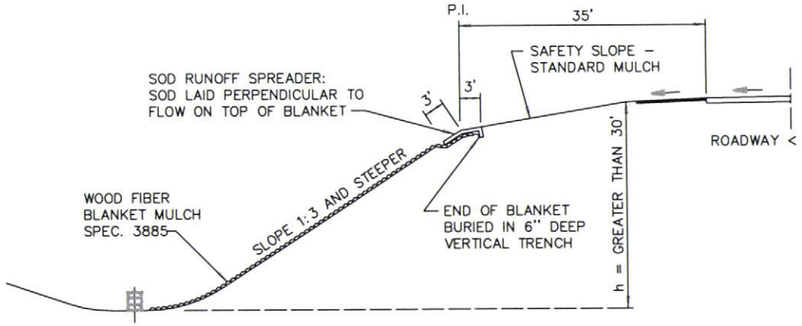
SHINGLING SOD

WHERE THE FLOW OF WATER IS SHEETING, PLACE SOD STRIPS PERPENDICULAR TO THE DIRECTION OF WATER FLOW.

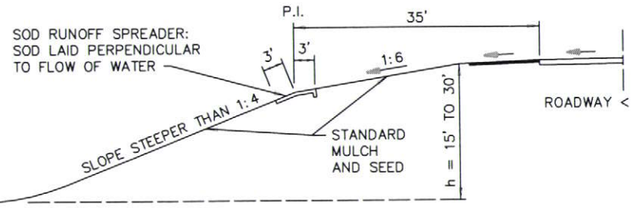
SPECIAL SOD PLACEMENT TECHNIQUES



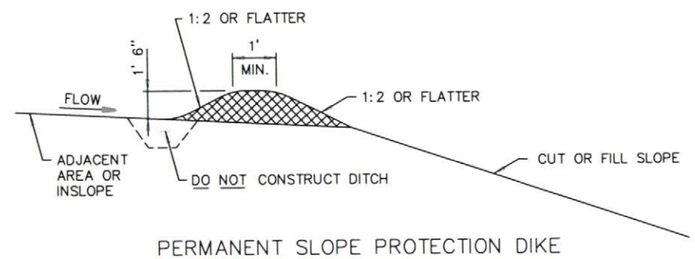
WOOD FIBER BLANKET INSTALLATION ON A CUT SLOPE



WOOD FIBER BLANKET INSTALLATION ON AN INSLOPE
(WHEN REQUIRED)



BROKEN–BACK SAFETY FILL SLOPE



PERMANENT SLOPE PROTECTION DIKE

STANDARD SHEET NO. 5–297.406	TITLE: PERMANENT EROSION CONTROL ALONG ROADWAYS AND AT GORE AREAS & BRIDGE APPROACH FILLS
STANDARD APPROVED: JANUARY 31, 1985	
REVISION DATE 10–26–2000	S.A.P.062–636–008 SHEET 11 OF 12 SHEETS

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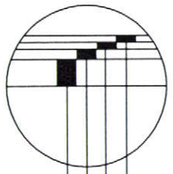
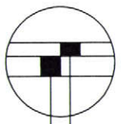
INSET A

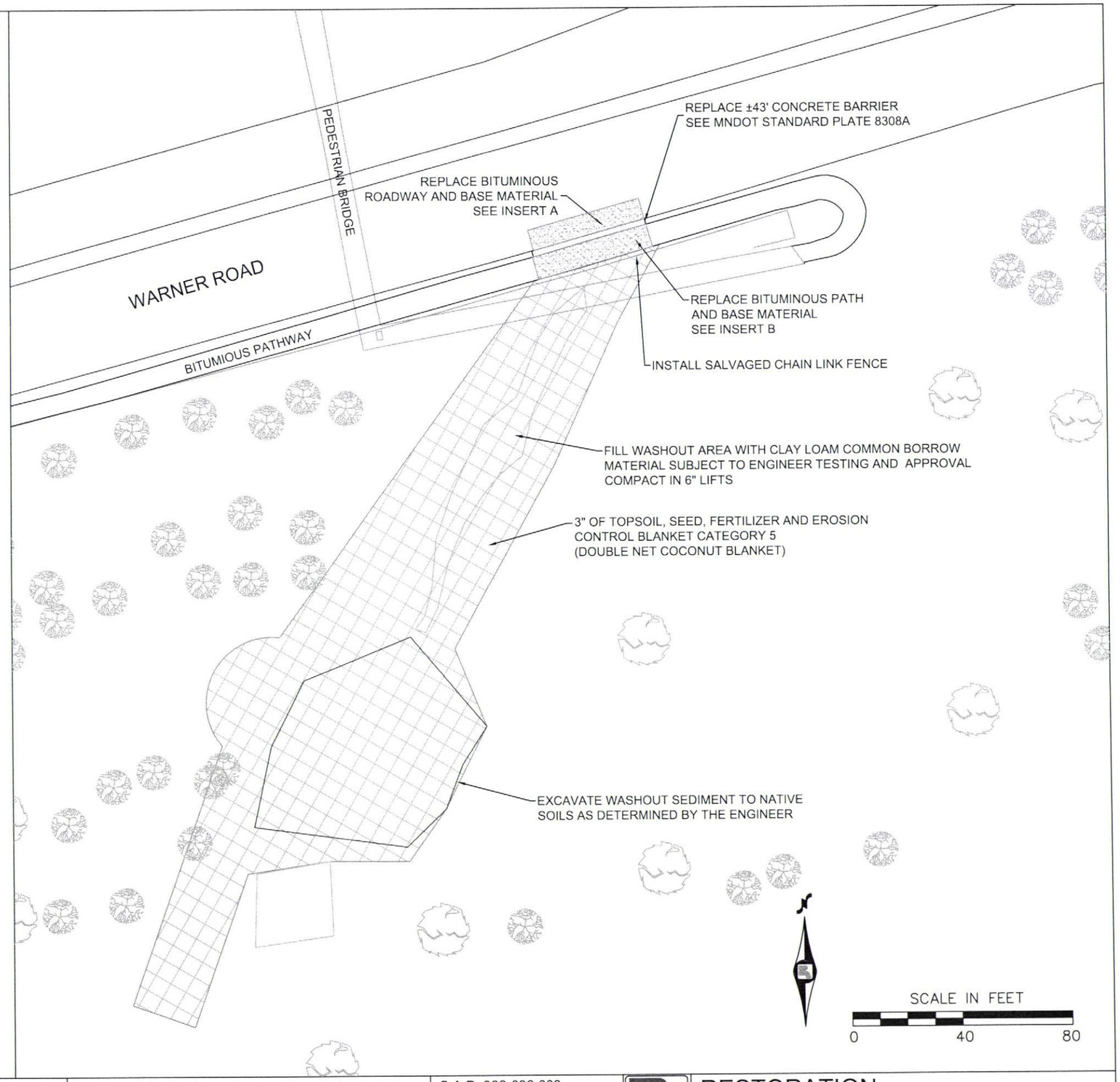


BITUMINOUS TACK COAT BETWEEN BIT. COURSES MN/DOT SPEC. 2357
2" - 2360 BITUMINOUS WEARING COURSE MIXTURE SPWEB440B
2" - 2360 BITUMINOUS WEARING COURSE MIXTURE SPWEB440B
3" - 2360 BITUMINOUS WEARING COURSE MIXTURE SPWB440B
6" - AGGREGATE BASE CLASS 6 MN/DOT SPEC. 3138

INSET B



4" 2360 BITUMINOUS WEARING COURSE MIXTURE SPWEB440B
6" AGGREGATE BASE CLASS 6 MN/DOT SPEC. 3138



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NO.	REV-DATE	BY:	DESCRIPTION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

SIGNED: Ruthann Fischer

REG NO: 50791 DATE: 9/12/2013

WARNER ROAD WASHOUT

500 FT. WEST OF HIGHWAY 61

S.A.P. 062-636-008

COUNTY PROJ. SO36E

RAMSEY COUNTY

RESTORATION

SHEET 12 OF 12 SHEETS