Form 413 Rev. 1959

CONVENTIONAL SIGNS

STATE LINE
COUNTY LINE
TOWNSHIP OR RANGE LINE
SECTION LINE
QUARTER LINE
SIXTEENTH LINE
RIGHT-OF-WAY LINE
PRESENT ROAD R/W LINE
LIMITED ACCESS
PROPERTY LINE (Except Same Lines)
VACATED PLATTED PROPERTY
CORPORATE OR CITY LIMITS
TRUNK HIGHWAY CENTER LINE
RETAINING WALL
STEAM RAILROAD
ELECTRIC RAILROAD
RAILROAD RIGHT-OF-WAY LINE
CREEK
RAPIDS OR WATERFALL
DRY RUN
DRAINAGE DITCH
HIGH TENSION LINE
POWER POLE LINE
TELEPHONE OR TELEGRAPH LINE
TELEPHONE CONDUIT
GUARD RAIL
WIRE FENCE
RAILROAD SNOW FENCE
BOARD OR HIGHWAY SNOW FENCE
STONE WALL OR FENCE
GAS MAIN
WATER PIPE
SEWER PIPE
DRAIN TILE
GRAVEL PIT
SAND PIT
CLAY PIT
ROCK QUARRY
SPRINGS
MARSH

TIMBER
BRUSH
ORCHARD
ROCK LEDGE
SAND
EDGE OF CUT
TOE OF EMBANKMENT
CATCH BASIN
MANHOLE
DROP INLET
FIRE HYDRANT
ARC LAMP
OTHER LAMPS (State Kind)
RAILROAD CROSSING SIGN
RAILROAD CROSSING BELL
ELECTRIC WARNING SIGN
CROSSING GATE
CATTLE GUARD
OVERHEAD (Highway Over)
UNDERPASS (Highway Under)
ABUTMENT, WALL & PIER
BRIDGE
CULVERT
BUILDING (One Story Frame)
C-CONCRETE S-STONE T-TILE B-BRICK ST.-STUCCO
HEDGE
IRON PIPE
STONE MONUMENT
WOOD STAKE OR HUB
MEANDER CORNER

T.106N. R.24W. / 35 36 / 2 1 / R.24W. T.105N.

CENTER SECTION 35 T.105N. R.24W.

12 / 13

NOTE: SECTION NUMBERS READ FROM THE SOUTH

N

STATE OF MINNESOTA

DEPARTMENT OF HIGHWAYS

CONSTRUCTION PLAN FOR Grading and Crushed Rock Wearing Course

County State Aid Highway No. 15

BETWEEN NE Cor Sec 35 T106N-R15W AND CSAH 25

From NE Cor Sec 35 T106N-R15W To Center of Sec 13 T106N-R15W

Give proper reference to Sections, Township and Range

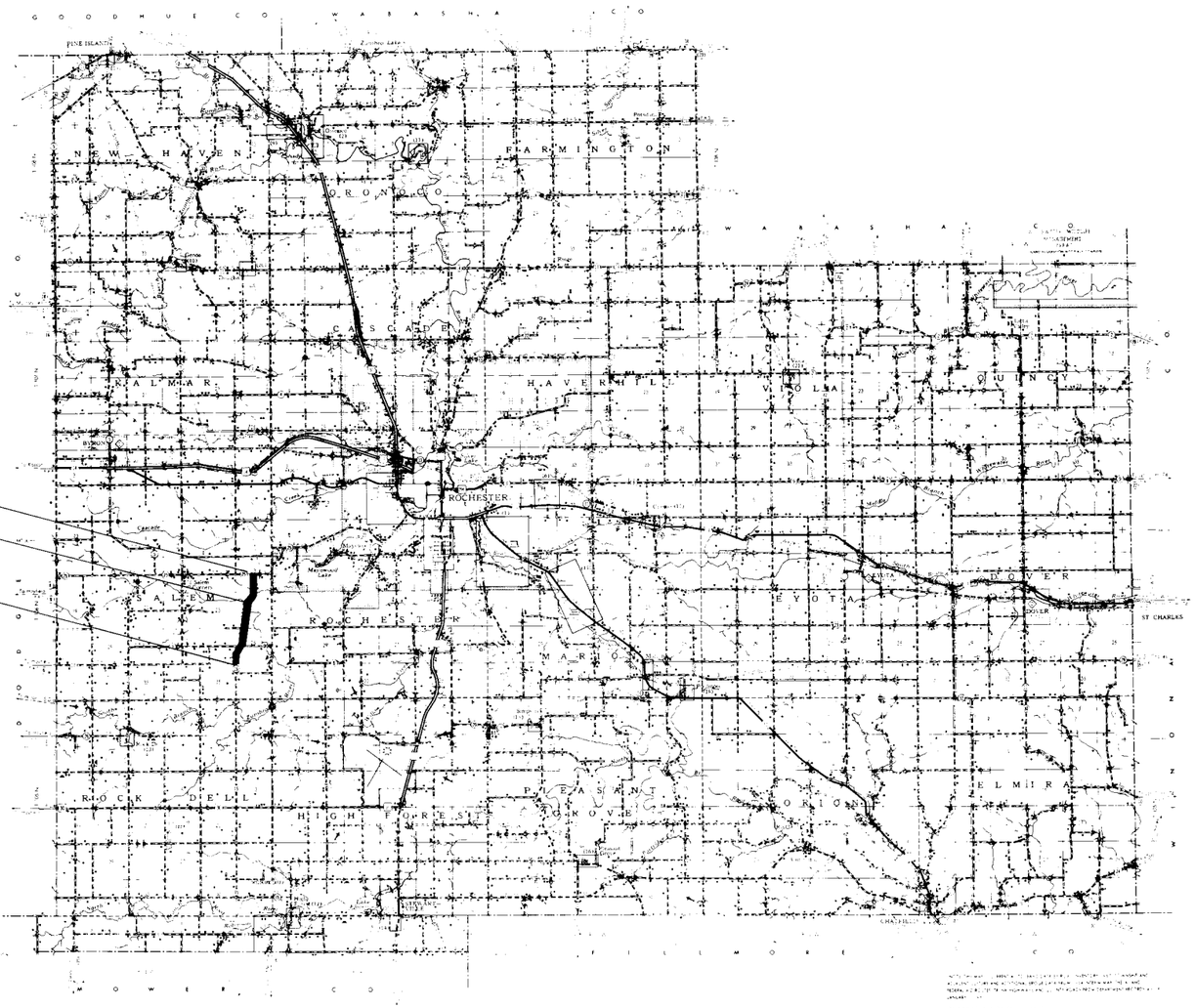
GROSS LENGTH 13,760.82 FEET 2.6062 MILES
BRIDGES LENGTH 135 FEET .0256 MILES
EXCEPTIONS LENGTH 135 FEET .0256 MILES
NET LENGTH 13,625.82 FEET 2.5806 MILES

SCALES
PLAN, 1 Inch=200 Feet
PROFILE, Horz. 1 Inch=200 Feet. Vert. 1 Inch=20 Feet
WORKING PLANS: Horz. 1 Inch=100 Feet; Vert. 1 Inch=10 Feet; Cross-Section 1 Inch=10 Feet

LAYOUT
Scale, 1 Inch=10560 Feet

INDEX OF SHEETS

Sheet No. 1. Title Sheet & Layout Map
" No. 2. Est. Quantities & Typical Sec.
" No. 3. To 7 Plan & Profile
" No. 8 To 35 Cross Sections
" No. 35A Channel Change "



End S.A.P. 55-615-02
Sta. 558+24.72
Bridge Exception
Sta. 515+07 To 516+42

Begin S.A.P. 55-615-02
Sta. 420+63.9

Design Speed 50 MPH

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

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

_____ DATE _____
COUNTY ENGINEER

_____ COUNTY REG. NO. _____

RECOMMENDED FOR APPROVAL _____ 19 ___
DISTRICT ENGINEER

RECOMMENDED FOR APPROVAL E. L. Mc Millan 19 1

APPROVED _____ 19 ___
STATE AID ENGINEER

—SPECIFICATIONS—

THE "SPECIFICATIONS FOR HIGHWAY CONSTRUCTION" DATED MAY 1, 1959, AND SUBMITTED FOR APPROVAL BY THE DIVISION ENGINEER OF THE BUREAU OF PUBLIC ROADS ON MARCH 26, 1959, SHALL GOVERN.

State Aid Project No. 55-615-02

OLMSTED County, Minnesota County Proj. No. _____ Plan No. _____ Sheet No. 1 of 35 Sheets

H. A. ROGERS CO. Minneapolis

FORM 129C-1 REV. '59

ESTIMATED QUANTITIES

SPECIFICATION NO.	ITEM	UNIT	MUNICIPAL	RURAL	TOTAL ESTIMATED QUANTITIES
2101.501	Clearing	Acre			2.18
2101.502	Clearing	Tree			232
2101.506	Grubbing	Acre			2.18
2101.507	Grubbing	Tree			247
2104.501	Remove Portable Culverts	Lin. Ft.			560
2105.501	Class "A" Excavation	Cu. Yd.			104,990
2105.502	Class "B" Excavation	Cu. Yd.			26,334
2501.511-16"	F&I CMP Culverts 16"	Lin. Ft.			568
2501.511-24"	F&I CMP Culverts 24"	Lin. Ft.			32
2501.511-36"	F&I CMP Culverts 36"	Lin. Ft.			46
2501.521-24"	F&I SCP Culverts 24" Class III	Lin. Ft.			54
2501.521-30"	F&I SCP Culverts 30" Class III	Lin. Ft.			120
2501.521-30"	F&I SCP Culverts 30" Class IV	Lin. Ft.			92
2501.521-36"	F&I SCP Culverts 36" Class III	Lin. Ft.			80
2501.521-42"	F&I SCP Culverts 42" Class III	Lin. Ft.			74
2501.521-48"	F&I SCP Culverts 48" Class III	Lin. Ft.			44
2515.531-18"	F&I Metal Aprons For CMP 18"	Apron			38
2515.531-24"	F&I Metal Aprons For CMP 24"	Apron			2
2515.531-36"	F&I Metal Aprons For CMP 36"	Apron			2
2515.541-24"	F&I Conc Aprons For SCP 24"	Apron			2
2515.541-30"	F&I Conc Aprons For SCP 30"	Apron			6
2515.541-36"	F&I Conc Aprons For SCP 36"	Apron			4
2515.541-42"	F&I Conc Aprons For SCP 42"	Apron			2
2515.541-48"	F&I Conc Aprons For SCP 48"	Apron			2
2104.520	Remove Structural Plate Culvert (Sta. 533+76)	Structure			1
109.621	Obliterate Old Road	Acre			0.39
2201.527	Gravel Sub-Base Inplace Class IV	Cu. Yd. (V.M.)			3,800
* 2252.527	Crushed Rock Wearing Course Inplace	Cu. Yd. (V.M.)			6,443
2130.501	Water	M. Gal.			161
2411.501	Concrete	Cu. Yd.			84.38
2411.525	Class "U" Excavation	Cu. Yd.			250
2411.541	Reinforcement Bars	Pound			13,910
2441.502	Single Lane By-Pass	By-Pass			1
2108.511	Channel Excavation (Class A)	Cu. Yd.			1155

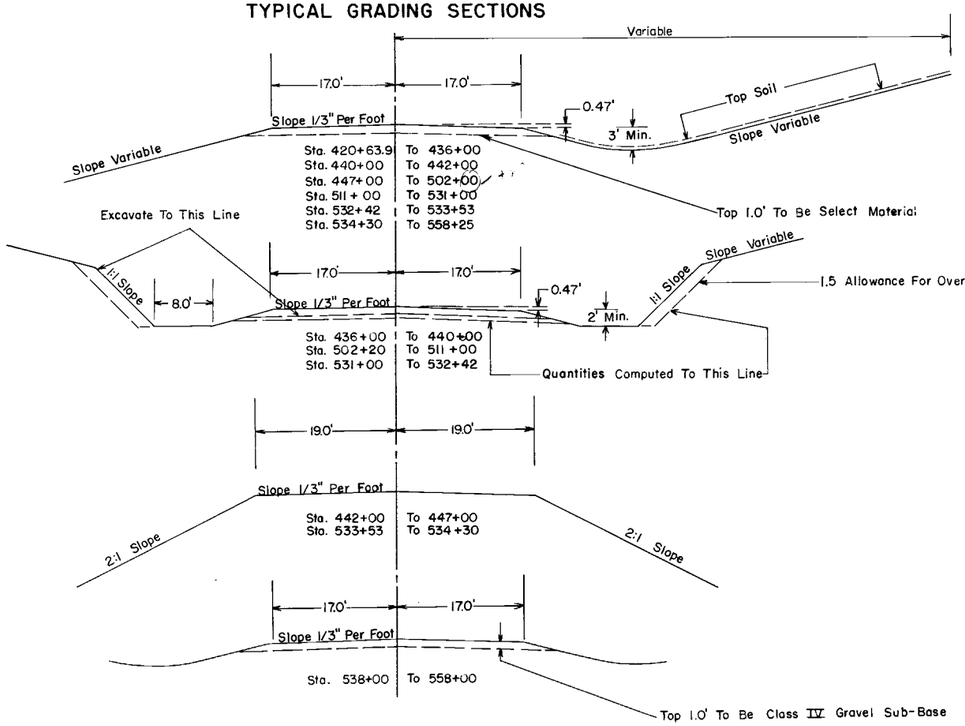
* NOTE: Item 2252.527 Includes 280 Cu.Yds. For Approaches and 150 Cu.Yds. For TWP Rds.

STANDARD DETAIL PLATES

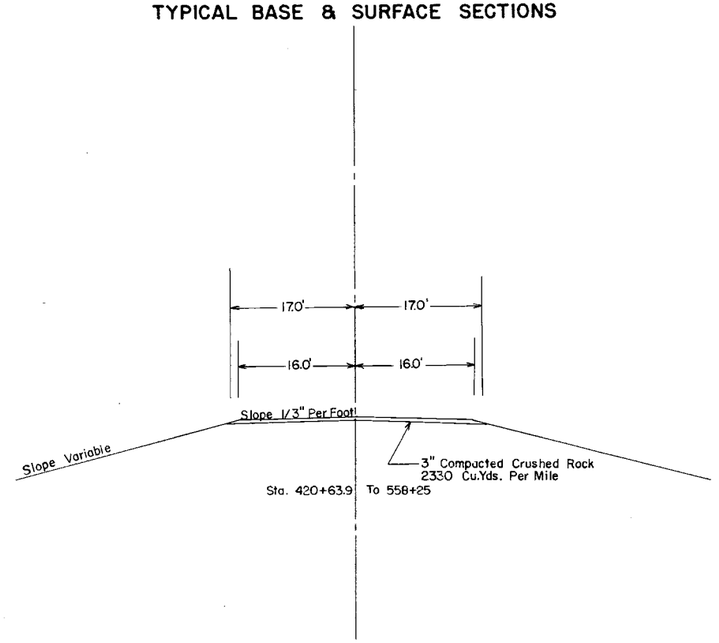
THE FOLLOWING STANDARD DETAIL PLATES, APPROVED BY THE BUREAU OF PUBLIC ROADS, SHALL APPLY ON THIS PROJECT.

PLATE NO.	DESCRIPTION
3100 & 3102A	Conc. Apron For Reinforced Conc. Pipes
3123 A	Metal Apron For CMP
3000 B	Reinforced Concrete Pipe
8000A, 8001, 8003 & 8008A	Signs & Barricades

TYPICAL GRADING SECTIONS



TYPICAL BASE & SURFACE SECTIONS



SPECIAL DETAILS

NOTE: Material from the upper 1.0' of the natural topsoil, shall not be used in the upper 1.0' of the roadbed. Part of this material shall be uniformly spread on slopes and ditch bottoms, to a depth of 3". No payment in addition to the contract price for Class A excavation, will be made for spreading the topsoil as above provided, nor will any undercutting made in excavation prior to placing the topsoil, be measured for payment.

NOTE: Corrugated metal, and sectional concrete pipe culvert excavation will be considered incidental, and will be under unit price for "Furnish and Install culvert pipe".

NOTE: Subgrade Treatment:
Excavate 1.0' below profile grade for compaction as shown on the plan and profile sheets. Excavation has been computed and is included in balanced quantities. Backfill with select material from R.O.W. Tapers shall be 50:1 in all cases.

NOTE: Place sectional concrete pipe on class c bedding.

NOTE: All dimensions and slopes shown on typical sections are approximate.

S.A.P. 55-615-02

DARMS PHOTO PRINT CO. MPLS 3, MINN.

420+63.9

B.M. Elev. 1115.77
Hub in Fe. Line 73' Lt.
Sta. 420+63.9

420+69 ℄ Culv.
Inpl. 48"x40' S.C.P.
and 2-48" S.C.P. Aprons
No Change

432+72 F.E.Lt.
No Culv. Inpl.
No Culv. Req'd

433+67 F.E.Lt.
No Culv. Inpl.
Fāl 18"X32' CMP
Fāl 2-18" Metal Aprons
For CMP

445+00 ℄ Culv. (Old Road)
Inpl. 24"x28' C.M.P.
Remove
Move To Sta. 445+30

445+30 ℄ Culv.
Fāl 30"X 92' SCP Cl. IV.
Fāl 2-30" Conc. Aprons
For SCP

446+45 Construct TWP RD Lt
No Culv. Req'd

BEARING ASSUMED DUE NORTH

PUMP COVER

Iron Pin

HUB

Ho.

TWP Rd.

C.S.A.H. No. 15

N. 54°00'E.

P.C. 439+83.89

Pl. 444+01.23
Δ Rt. 54°00'30"
D 7°00'
T 417.34'
L 771.43

P.T. 447+55.32

431+68 F.E.Rt.
No Culv. Inpl.
Fāl 18"X32' CMP
Fāl 2-18" Metal Aprons
For CMP

433+02 ℄ Culv.
Inpl. 18"x22' C.M.P.
Remove
Fāl 24"X54' SCP Cl III
Fāl 2-24" Conc. Aprons
For SCP

433+77 ℄ Culv.
Inpl. 18"x26' C.M.P
(Skewed)
Remove
No Culv. Req'd

438+48 F.E.Rt.
Inpl. 15"x30' C.M.P.
Remove
Fāl 18"X32' CMP
Fāl 2-18" Metal Aprons
For CMP

B.M. Elev. 1154.90
Spk. in P.P. 32' Lt.
Sta. 433+91

B.M. Elev. 1124.73
Spk. in P.P. 62' Lt.
Sta. 442+73

B.M. Elev. 1109.90
Spk. in P.P. 120' Lt.
Sta. 447+55

Cl. 34 Gr. 30

Cl. 32 Gr. 36

Finished Grade

Present Grade

Profile 75' Lt.
Profile 75' Rt.

Pl+00
Elev. 23.0
600' V.C.
M= 2.25

+1.3%

+4.3%

P.V.C.+00

P.V.T.+00

Elev. 19.1

Elev. 35.9

Inlet 48.5

Outlet 45.0

Pl+50
Elev. 72.45
1100' V.C.
M= 15.675

-7.1%

-1.3%

Elev. 33.4

Elev. 33.07728

P.V.C.+04.5454

P.V.T.+00

Pl +54.5454
Elev. 1108.2273
700' V.C.
M=4.3313

Inlet 03.2

Outlet 00.5

Inlet 00.0

Outlet 99.8

Subgrade Treatment
Exc. 1.0' Below Profile Grade
Sta. 420+63.9 To Sta. 424+50

EXC. A 9787
B 1858
EMB. 7908

Subgrade Treatment
Exc. 1.0' Below Profile Grade
Sta. 431+00 To Sta. 433+00

EXC. A 6584
B 1130
EMB. 5293

Subgrade Treatment
Exc. 1.0' Below Profile Grade
Sta. 439+00 To Sta. 441+00

420 425 430 435 440 445 450

449+20 ℄ Culv.
F&I 36"X40' SCP Cl III
F&I 2-36" Conc. Aprons
For SCP
Construct Ditch Block

P.C.450+05.40

P.I.453+34.92
Δ Lt. 43°50'
D 7°00'
T 329.52
L 626.19

P.T.456+31.59

468+03 F.E.Lt.
Inpl. 18"x20' C.M.P.
Remove
F&I 18"X32' CMP
F&I 2-18" Metal Aprons
For CMP

469+69 F.E.Lt.
No Culv.Inpl.
F&I 18"X28' CMP
F&I 2-18" Metal Aprons
For CMP

P.C.464+84.66

P.I.468+64.67
Δ 1°16'
D 0°10'
T 380.01
L 759.99

P.T.472+44.65

476+59 Twp.Rd.Lt.
No Culv. Inpl.
No Culv. Req'd

C.S.A.H. No.15
N.54°00'E
N.10°10'E.
N.8°54'E.
Twp. Rd.
HUB
WATER TROUGH
WINDMILL & PUMPHOUSE
Ho.
FOUNDATION
6" DRAIN TILE

451+39 ℄ Culv.(Old Road)
Inpl. 30"x42"C.M.P.
Remove
No Culv. Req'd

450+45 Construct TWP RD Rt
F&I 36"x46' CMP
F&I 2-36" Metal Aprons
For CMP

456+98 F.E.Rt.
No Culv. Inpl.
F&I 18"X32' CMP
F&I 2-18" Metal Aprons
For CMP

465+23 ℄ Culv.
Inpl. 36"x30' C.M.P.
Conc. Header on Inlet
Remove
F&I 48"X44' SCP Cl. III
F&I 2-48" Conc. Aprons
For SCP

472+70 ℄ Culv.
Inpl. 24"x37' Pipe Arch
Remove
F&I 30"X74' SCP Cl. III
F&I 2-30" Conc. Aprons
For SCP

476+60 F.E.Rt.
No Culv. Inpl.
No Culv. Req'd

476+83 ℄ Culv.
Inpl. 24"x 28'C.M.P.
Remove
F&I 30"X46' SCP Cl. III
F&I 2-30" Conc. Aprons
For SCP

Cl. 0 Gr. I

B.M. Elev. 1085.17
Spk. in Twin Maple 48' Rt.
Sta. 456+87

Cl. 14 Gr. 17

B.M. Elev. 1074.25
Spk. in P.P. 56' Lt.
Sta. 476+29

Finished ℄ Grade

P.V.T. +04.54 Elev. 100.70227

-2.15%

P.V.C. +00 Elev. 77.15

P.V.T. +00 Elev. 71.6

+0.3%

P.V.C. +00 Elev. 74.3

P1+00
Elev. 70.7
600' V.C.
M=1.8375

P1+00
Elev. 75.2
600' V.C.
M=1.875

Profile 75' Lt.
Profile 75' Rt.

EXC. 24091
EMB. 16727

EXC. 10185
EMB. 6675

EXC. 4411
EMB. 2926

Inlet 66.0
Outlet 65.6

Inlet 66.3
Outlet 62.0

Inlet 70.4
Outlet 69.5

Subgrade Treatment
Exc. 1.0' Below Profile Grade
Sta. 448+00 To Sta. 460

Subgrade Treatment
Exc. 1.0' Below Profile Grade
Sta. 464+33 To Sta. 471+50

Present ℄ Grade

1107.5 07.8 07.7 08.4 10.4 10.6 09.0 03.4 99.9 98.3 97.4 96.0 93.6 85.7 84.7 82.2 81.3 81.0 80.5 80.1 77.9 74.5 72.3 71.8 70.8 70.4 70.6 70.8 70.8 71.2 71.4 71.9 71.7 72.1 71.2 71.4 70.6 70.2 68.0 66.3 65.0 64.6 63.5 64.8 66.4 68.9 70.1 70.4 71.2 71.2 71.8 70.6 70.3 70.1 71.1 72.7 73.4 74.3 76.1

450 455 460 465 470 475 480

SAP55-615-02 CSAH 15 Sheet 4 of 35

480+11 F.E. Lt.
Inpl. 15"x 20' C.M.P.
Remove
F&I 24"X32' CMP
F&I 2-24" Metal Aprons
For CMP

490+39 F.E. Lt.
Inpl. 15"x24' C.M.P.
Remove
F&I 18"X32' CMP
F&I 2-18" Metal
Aprons For CMP

491+03 F.E. Lt.
Inpl. 12"x 16' C.M.P.
Remove
F&I 18"X32' CMP
F&I 2-18" Metal
Aprons For CMP

492+95 F.E. Lt.
Inpl. 12"x 16' C.M.P.
Remove
F&I 18"X28' CMP
F&I 2-18" Metal Aprons
For CMP

497+34 F.E. Lt.
Inpl. 15"x 18' C.M.P.
Remove
F&I 18"X28' CMP
F&I 2-18" Metal Aprons
For CMP

P.C. 486+24.64
P.I. 489+90.72
Δ Lt. 3° 03'
D 0°25'
T 366.08
L 732.01
P.T. 493+56.65
P.O.T. 503+65.54

Ho.
Barn
Corn Crib
8" Drain Tile
Foundation
N. 8° 54' E.
Pump Ho.
Tile Out.
Ho.
Corn Crib
Grainary
Foundation
Foundation
N. 5° 51' E.
Woods

480+11 F.E. Rt.
No Culv. Inpl.
No Culv. Req'd

489+77 ℄ Culv.
Inpl. 12"x 32' C.M.P.
Remove
No Culv. Req'd

490+66 F.E. Rt.
No Culv. Inpl.
F&I 18"X28' CMP
F&I 2-18" Metal
Aprons For CMP

492+64 F.E. Rt.
Inpl. 12"x11' C.M.P.
Remove
No Culv. Req'd

497+05 ℄ Culv.
Inpl. 30"x36' C.M.P.
Conc. header on inlet
Remove
F&I 42"X74' SCP Cl III
F&I 2-42" Conc. Aprons
For SCP

Cl. 83 Gr. 73

Cl. 47 Gr. 60

B.M. Elev. 1100.03
Spk. in Cor. Fe. Post 28' Lt.
Sta. 503+25

Finished ℄ Grade

Profile 75' Lt.
Profile 75' Rt.

PI+00
Elev. 75.2
600' V.C.
M= 1.875
+2.8%
Elev. 83.6
P.V.C.+50
P.V.T.+00
Elev. 90.6

PI+00
Elev. 03.2
900' V.C.
M= 7.2
P.V.C.+57.2727
P.V.T.+50
Elev. 86.9
Elev. 86.63818
-3.0%

PI+47.27272
Elev. 76.2982
580' V.C.
M= 3.9875
P.V.T.+37.2727
P.V.C.+00
Elev. 81.90818
+1.9%
Elev. 83.0

PI+00
Elev. 90.6
800' V.C.
M= 5.9
P.V.T.+00
Elev. 74.6
Elev. 73.26668
+4.0%
P.V.C.+33.3333

Inlet 709
Outlet 676

EXC. A 12232
B 1023
EMB. 9230

EXC. 517+63 to 518+57
B 80
EMB. 348

EXC. A 7037
B 7904
EMB. 11602

Subgrade Treatment
Exc. 1.0' Below Profile Grade
Sta. 486+00 To Sta. 492+25

Subgrade Treatment
Exc. 1.0' Below Profile Grade
Sta. 500+50 To Sta. 501+50

Present ℄ Grade

480 485 490 495 500 505

515+76 ℄ Truss Bridge
Inpl. Bridge No. 4076
18' Roadway 38' Span

511+00 F.E. Lt.
Inpl. 15"x20' C.M.P.
Remove
F&I 18"X32' CMP
F&I 2-18" Metal Aprons
For CMP

Grading Exception
Sta. 515+07 to 516+42
Construct Bridge Approach Only

527+00 Pl. F.E. LT
F&I 18"X28' CMP
F&I 2-18" Metal Aprons
For CMP

P.C. 527+52.44

P.I. 531+35.0
Δ Lt. 29°54'
D 4°00'
T 382.56
L 747.50

P.T. 534+99.94

535+94 F.E. Lt.
No Culv. Inpl.
F&I 18"X28' CMP
F&I 2-18" Metal Aprons
For CMP

537+25 F.E. Rt.
Inpl. 12"x24' C.M.P.
Remove
F&I 18"X28' CMP
F&I 2-18" Metal Aprons
For CMP

535+84 F.E. Rt.
Inpl. 12"x22' C.M.P.
Remove
F&I 18"X32' CMP
F&I 2-18" Metal Aprons
For CMP

527+00 Pl. F.E. RT
F&I 18"X28' CMP
F&I 2-18" Metal Aprons
For CMP

527+65 ℄ Culv. (old Road)
Inpl. 18"x26' Pipe Arch
Remove
No Culv. Req'd

528+14 F.E. Rt.
No Culv. Inpl.
No Culv. Req'd

533+76 ℄ Structural Plate Arch
Inpl 6'9" Rise 10'3" Span X 38' (9 Gauge)
Remove
Pl. C86X81'
Class A Concrete 84.38 Cu. Yds.
Reinforcement Bars 13,910 Lbs.
Class U Exc. 250 Cu. Yds.
Single Lane By-Pass

Pl. 511+10.42
Δ Rt. 23°35'30"
D 5°00'
T 239.3257
L 471.834

P.C. 508+71.10

P.T. 513+42.93

Construct Channel Change
Channel Excavation (Class A) 1,155 Cu. Yds.

Woods & Brush

SAND BAR

N. 29°26'E.

Cl. 2.18 acres Gr. 2.18 acres

Cl. 2 Gr. 2

Cl. 20 Gr. 28

B.M. Elev. 1046.18
Spk. in P.P. 30' Rt.
Sta. 525+19

B.M. Elev. 1067.17
Spk. in P.P. 5' Rt.
Sta. 530+58

Finished ℄ Grade

Present ℄ Grade

Profile 75' Lt.

Profile 75' Rt.

Pl+33.3333
Elev. 61.2667
600' V.C.
M=2.25

P.V.C.+33.3333 Elev. 58.26667

P.V.T. +33333

P.V.C. +00 Elev. 52.6

Pl+00
Elev. 48.6
800' V.C.
M=2.41

P.V.T. +00 Elev. 54.2

P.V.C.+21.0843 Elev. 61.58729

Inlet 450
Outlet 44.4

-4.0%

-1.0%

+1.41%

EXC. A 13839
EMB. B 7842
15905

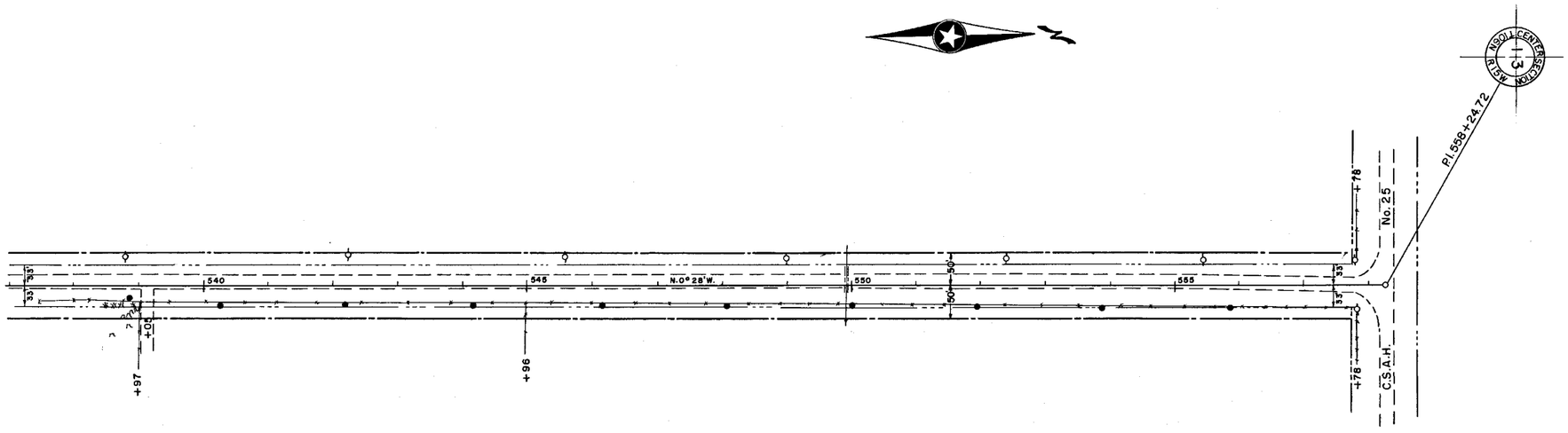
EXC. A 7379
EMB. B 2832
7126

EXC. A 187
EMB. B 2483
2201

EXC. A 5439
EMB. B 1254
5005

Subgrade Treatment
Exc. 1.0' Below Profile Grade
Sta. 509+50 To Sta. 512+25

Subgrade Treatment
Exc. 1.0' Below Profile Grade
Sta. 526+58 To Sta. 530+50



539+05 F.E.Rt.
No Culv. Inpl.
F&I 18"X28' CMP
F&I 2-18" Metal Aprons
For CMP

549+93 ℄ Culv.
Inpl. 24"x 32' C.M.P.
Remove
F&I 36"X40' SCP Cl. III
F&I 2-36" Conc. Aprons
For SCP

554+00 Pl. F.E. RT
F&I 18"X28' CMP
F&I 2-18" Metal Aprons
For CMP

B.M. Elev. 1070.69
Spk. in P.P. 40' Lt.
Sta. 542+22

B.M. Elev. 1073.97
Spk. in P.P. 36' Lt.
Sta. 557+78

