

# City of Lennox

Lincoln County

## Plans for Proposed Grading, Concrete Paving and Flashing Beacons

# Project P SRTS(23)

## Safe Routes to School

PCN 03C7

Stockwell No. 5412



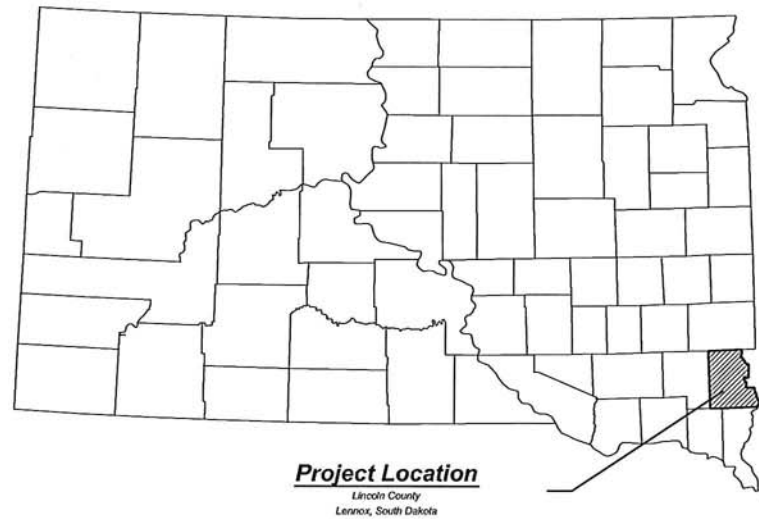
**STOCKWELL**  
ENGINEERS

600 N. MAIN AVENUE #100  
SIOUX FALLS, SD 57104  
PH. (605) 338-6668  
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### Index of Sheets

SHEET NO. A-1 THRU A-5	TITLE SHEET, LEGEND, ORIENTATION/DATA CONTROL
SHEET NO. B-1 THRU B-5	EST. OF QUANTITIES/GENERAL NOTES/TYPICAL SECTION
SHEET NO. C-1 THRU C-3	TRAFFIC CONTROL
SHEET NO. D-1 THRU D-7	EROSION CONTROL/GRADING PLAN
SHEET NO. E-1 THRU E-3	EXISTING CONDITIONS/REMOVALS
SHEET NO. F-1 THRU F-10	PAVEMENT PLAN
SHEET NO. M-1 THRU M-9	STRIPING & SIGNAGE PLAN
SHEET NO. X-1 THRU X-9	CROSS SECTIONS



### Location Map

Drawing indicates general utility locations only. Neither the correctness or completeness of locations are guaranteed.

Prior to excavation contact:  
SOUTH DAKOTA ONE CALL (1-800-781-7474)



I, Jon D. Fischer, hereby certify that these plans were prepared by me, or under my direct supervision and that I am a duly registered engineer under the laws of the State of South Dakota.

*Jon Fischer* 1-22-14  
Jon D. Fischer S.D. No. 8608 Date

**STORM WATER PERMIT**  
(NONE REQUIRED)

### LEGEND OF SYMBOLS

- — — — — CENTERLINE
- — — — — PROPERTY LINE
- - - - -1400- - - - - MAJOR CONTOUR
- - - - -1402- - - - - MINOR CONTOUR
- - - - -W- - - - - WATER MAIN
- - - - -ST- - - - - STORM SEWER
- - - - -S- - - - - SANITARY SEWER
- - - - -FM- - - - - SANITARY SEWER FORCE MAIN
- - - - -CS- - - - - COMBINED SEWER
- - - - -G- - - - - GAS MAIN
- - - - -UT- - - - - UNDERGROUND TELEPHONE
- - - - -OT- - - - - OVERHEAD TELEPHONE
- - - - -UP- - - - - UNDERGROUND POWER
- - - - -OP- - - - - OVERHEAD POWER
- - - - -F- - - - - FIBER OPTIC
- - - - -UTV- - - - - UNDERGROUND CABLE TV
- - - - -OTV- - - - - OVERHEAD CABLE TV
- - - - -TR- - - - - TRAFFIC
- - - - -IW- - - - - INDUSTRIAL WASTE
- - - - -SL- - - - - LAWN SPRINKLER LINE
- ==== - - - - - CONC. CURB & GUTTER
- ==== - - - - - APPROACH
- □ — □ — WOOD FENCE
- ○ — ○ — CHAIN LINK FENCE
- X — X — BARBED WIRE FENCE

- DECIDUOUS TREE
- CONIFEROUS TREE
- TREE STUMP
- SHRUB
- SIGN
- PARKING METER POST
- MAIL BOX
- FLAGPOLE
- SPRINKLER HEAD
- GAS VALVE
- TRAFFIC SIGNAL LIGHT
- POWER POLE
- GUY WIRE
- STREET LIGHT
- FLOOD LIGHT
- HISTORICAL STREET LIGHT
- UTILITY CLOSURE
- WELL
- WATERMAIN SHUTOFF
- FIRE HYDRANT
- WATERMAIN VALVE & BOX
- WATERMAIN CAP
- WATERMAIN TEE
- WATERMAIN CROSS
- WATERMAIN REDUCER

- WATERMAIN SLEEVE
- UTILITY CLEANOUT
- UTILITY RISER
- UTILITY METER
- STORM SEWER MANHOLE
- SANITARY MANHOLE
- WATER MANHOLE
- ELECTRIC MANHOLE
- TELEPHONE MANHOLE
- FIBER OPTIC MANHOLE



LEGEND

DESIGNED BY: JCF	ACAD FILE: S417 - THE STATE
CHECKED BY: JCF	DATE: 1/22/14
BY: JCF	DATE: JCF
REVISIONS:	

€ **HORIZONTAL ALIGNMENT DATA**

**FOURTH AVENUE**

Tangent Data			
Description	PT Station	Northing	Easting
Start:	0+00.000	15754784.077	2197232.333
End:	5+01.109	15754796.820	2197733.280
Tangent Data			
Parameter	Value	Parameter	Value
Length:	501.109	Course:	N 88° 32' 34.1125" E

**ELM STREET**

Tangent Data			
Description	PT Station	Northing	Easting
Start:	20+00.000	15753213.547	2199942.120
End:	24+00.000	15752813.827	2199957.072
Tangent Data			
Parameter	Value	Parameter	Value
Length:	400.000	Course:	S 02° 08' 32.1286" E

**EIGHTH AVENUE**

Tangent Data			
Description	PT Station	Northing	Easting
Start:	10+00.000	15753149.090	2198590.697
End:	11+30.000	15753278.999	2198585.838
Tangent Data			
Parameter	Value	Parameter	Value
Length:	130.000	Course:	N 02° 08' 31.4632" W
Tangent Data			
Description	PT Station	Northing	Easting
Start:	11+30.000	15753278.999	2198585.838
End:	14+99.153	15753288.012	2198954.881
Tangent Data			
Parameter	Value	Parameter	Value
Length:	369.153	Course:	N 88° 36' 03.8387" E
Tangent Data			
Description	PT Station	Northing	Easting
Start:	14+99.153	15753288.012	2198954.881
End:	17+50.000	15753538.763	2198947.918
Tangent Data			
Parameter	Value	Parameter	Value
Length:	250.847	Course:	N 01° 35' 25.7425" W

**MAIN STREET**

Tangent Data			
Description	PT Station	Northing	Easting
Start:	30+00.000	15753538.326	2201017.052
End:	33+00.000	15753238.541	2201028.410
Tangent Data			
Parameter	Value	Parameter	Value
Length:	300.000	Course:	S 02° 10' 10.7491" E



SAFE ROUTES TO SCHOOL

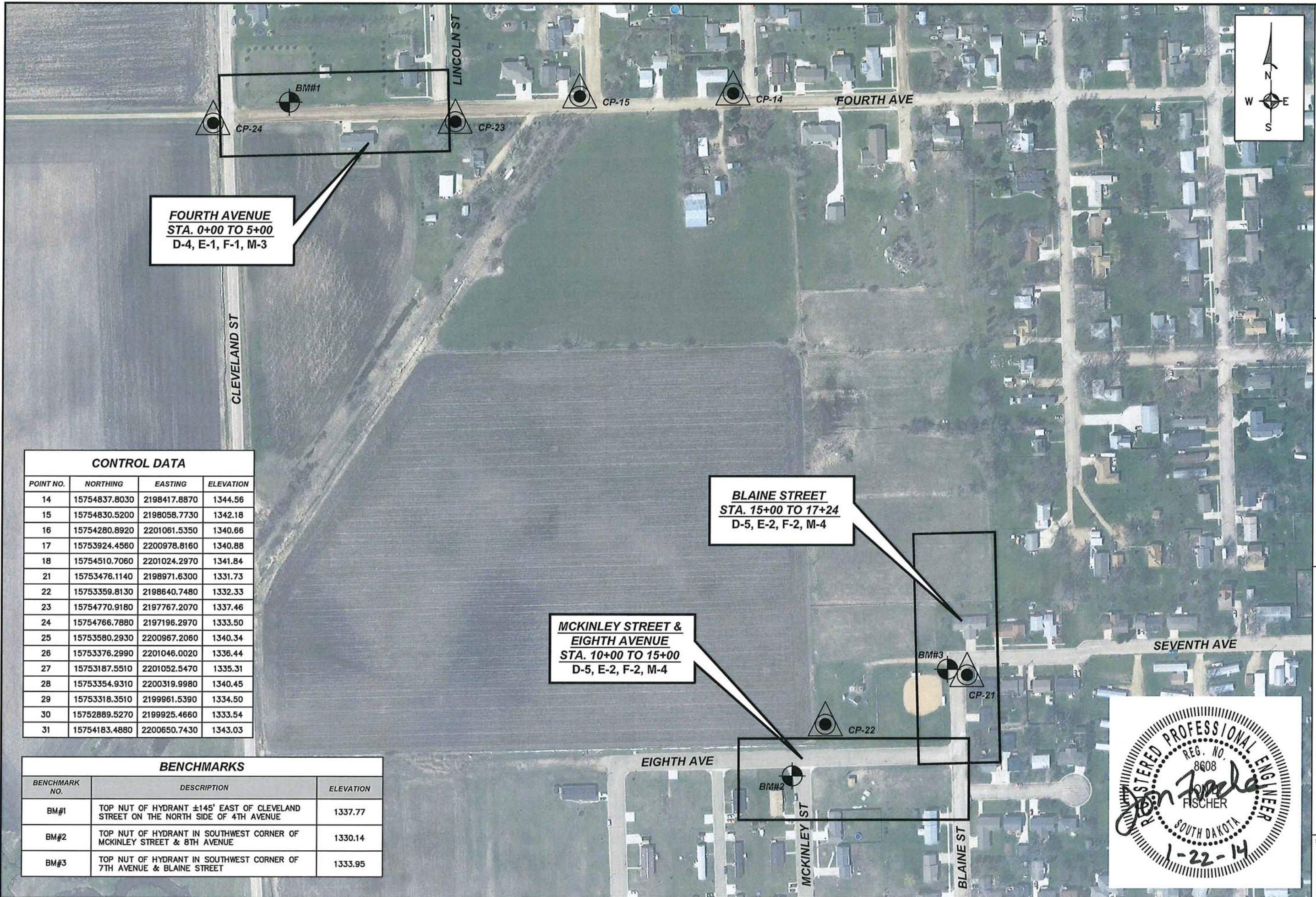
LENNOX, SD

ALIGNMENT DATA  
 DESIGNED BY: JF  
 DRAWN BY: JF  
 CHECKED BY: JF  
 DATE: 1/22/14

**STOCKWELL ENGINEERS**  
 SIOUX FALLS, SD

SHEET NO.

A-3



**FOURTH AVENUE**  
**STA. 0+00 TO 5+00**  
**D-4, E-1, F-1, M-3**

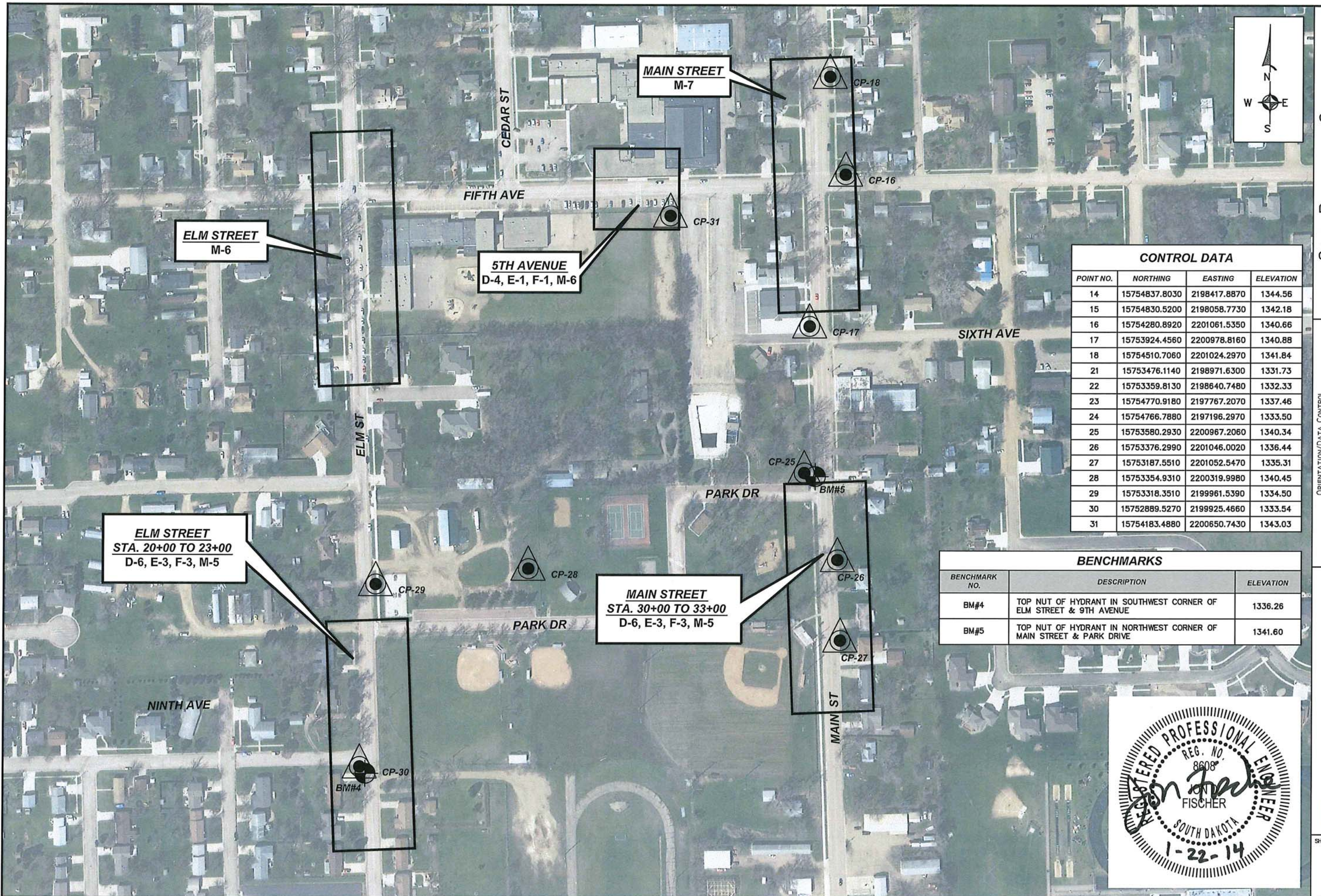
**BLAINE STREET**  
**STA. 15+00 TO 17+24**  
**D-5, E-2, F-2, M-4**

**MCKINLEY STREET & EIGHTH AVENUE**  
**STA. 10+00 TO 15+00**  
**D-5, E-2, F-2, M-4**

CONTROL DATA			
POINT NO.	NORTHING	EASTING	ELEVATION
14	15754837.8030	2198417.8870	1344.56
15	15754830.5200	2198058.7730	1342.18
16	15754280.8920	2201061.5350	1340.66
17	15753924.4560	2200978.8160	1340.88
18	15754510.7060	2201024.2970	1341.84
21	15753476.1140	2198971.6300	1331.73
22	15753359.8130	2198640.7480	1332.33
23	15754770.9180	2197767.2070	1337.46
24	15754766.7880	2197196.2970	1333.50
25	15753580.2930	2200967.2060	1340.34
26	15753376.2990	2201046.0020	1336.44
27	15753187.5510	2201052.5470	1335.31
28	15753354.9310	2200319.9980	1340.45
29	15753318.3510	2199961.5390	1334.50
30	15752889.5270	2199925.4660	1333.54
31	15754183.4880	2200650.7430	1343.03

BENCHMARKS		
BENCHMARK NO.	DESCRIPTION	ELEVATION
BM#1	TOP NUT OF HYDRANT ±145' EAST OF CLEVELAND STREET ON THE NORTH SIDE OF 4TH AVENUE	1337.77
BM#2	TOP NUT OF HYDRANT IN SOUTHWEST CORNER OF MCKINLEY STREET & 8TH AVENUE	1330.14
BM#3	TOP NUT OF HYDRANT IN SOUTHWEST CORNER OF 7TH AVENUE & BLAINE STREET	1333.95





CONTROL DATA			
POINT NO.	NORTHING	EASTING	ELEVATION
14	15754837.8030	2198417.8870	1344.56
15	15754830.5200	2198058.7730	1342.18
16	15754280.8920	2201061.5350	1340.66
17	15753924.4560	2200978.8160	1340.88
18	15754510.7060	2201024.2970	1341.84
21	15753476.1140	2198971.6300	1331.73
22	15753359.8130	2198640.7480	1332.33
23	15754770.9180	2197767.2070	1337.46
24	15754766.7880	2197196.2970	1333.50
25	15753580.2930	2200967.2060	1340.34
26	15753376.2990	2201046.0020	1336.44
27	15753187.5510	2201052.5470	1335.31
28	15753354.9310	2200319.9980	1340.45
29	15753318.3510	2199961.5390	1334.50
30	15752889.5270	2199925.4660	1333.54
31	15754183.4880	2200650.7430	1343.03

BENCHMARKS		
BENCHMARK NO.	DESCRIPTION	ELEVATION
BM#4	TOP NUT OF HYDRANT IN SOUTHWEST CORNER OF ELM STREET & 9TH AVENUE	1336.26
BM#5	TOP NUT OF HYDRANT IN NORTHWEST CORNER OF MAIN STREET & PARK DRIVE	1341.60



## ESTIMATE OF QUANTITIES

STANDARD BID ITEM	ITEM	QTY	UNIT
009E0010	Mobilization	1	LS
100E0010	Clear and Grub Tree	1	Each
100E0100	Clearing	1	LS
110E0300	Remove Concrete Curb and Gutter	45	Ft
110E1010	Remove Asphalt Concrete Pavement	13.9	SqYd
110E1100	Remove Concrete Pavement	12.1	SqYd
110E1140	Remove Concrete Sidewalk	244	SqYd
120E0010	Unclassified Excavation	750	CuYd
230E0100	Remove & Replace Topsoil	1	LS
260E2010	Gravel Cushion	506	Ton
260E3010	Gravel Surfacing	83	Ton
320E1200	Asphalt Concrete Composite	5	Ton
380E3520	6" PCC Approach Pavement	7.9	SqYd
380E4010	6" PCC Fillet Section	12.1	SqYd
632E1320	2.0"x2.0" Perforated Tube Post	79.3	Ft
632E3203	Flat Aluminum Sign, Nonremovable Copy High Intensity	78.3	SqFt
632E3710	Radar Speed Sign, Solar Powered	4	Each
633E1407	Pavement Marking Paint, 6" White	167	Ft
633E1430	Pavement Marking Paint, 24" White	184	Ft
634E0010	Flagging	10	Hr
634E0100	Traffic Control	714	Unit
634E0120	Traffic Control, Miscellaneous	1	LS
635E5960	Solar Powered Flashing Beacon	2	Each
650E0060	Type B66 Concrete Curb & Gutter	45	Ft
651E0050	5" Concrete Sidewalk	10,534	SqFt
651E0060	6" Concrete Sidewalk	1533	SqFt
651E7000	Type 1 Detectable Warnings	90	SqFt
730E0251	Special Permanent Seed Mixture 1	237	Lb
731E0100	Fertilizing	91	Lb
732E0250	Fiber Mulching	1214	Lb
734E0845	Sediment Control at Inlet with Frame & Grate	1	Each
734E5010	Sweeping	25	Hour
900E1310	Concrete Washout Facility	1	Each

## GENERAL NOTES

### PROJECT SCOPE

This project consists of grading and construction of concrete pathway in various locations in Lennox, SD. Work will include grading, concrete sidewalk, concrete curb & gutter, asphalt patching, pedestrian crossing beacons, speed zone beacons and pavement striping.

### SPECIFICATIONS TO BE USED

The most current edition of the City of Lennox General Conditions for Public Improvements and Supplemental Standard Specifications, together with the most current edition of the South Dakota Department of Transportation Standard Specifications for Roads and Bridges with Supplemental Specifications and Errata and required provisions, supplemental specifications, and/or special provisions as included in the Project Manual are hereby made a part of these specifications in its entirety unless otherwise revised, deleted, or supplemented herein.

The South Dakota Department of Transportation Standard Specifications for Roads and Bridges with Supplemental Specifications and Errata can be downloaded from the SDDOT's website at <http://www.sddot.com/>.

### ORDER OF PRECEDENCE

If conflicts arise, the order of precedence of the contract documents shall be as follows: Plans over Special Provisions over Supplemental Specifications over City of Lennox Supplemental Standard Specifications over City of Lennox General Conditions for Public Improvements over South Dakota Department of Transportation Supplemental Specifications and Errata over South Dakota Department of Transportation Standard Specifications for Roads and Bridges.

### CONSTRUCTION LIMITS

The construction limits shall be within the right-of-way and easement areas. Material storage and vehicle and equipment traffic shall be limited to the construction limits. All paved streets adjacent to the project are to be cleaned at the end of each working day.

It shall be the responsibility of the contractor to coordinate with the property owners relating to access to their property and any subsequent damages.

### GRADE STAKES, BENCHMARKS AND MONUMENTS

All stakes, stones, and monuments now in place and marking lines and corners of boundaries which are likely to be affected by the work herein provided for shall be carefully preserved by the Contractor. In no case shall any excavation be made within five feet (5') of any such stake, stone or monument until they have been properly reset, witnessed, or otherwise cared for by the Engineer and permission is given to proceed with the work.

All lines, grade stakes, and benchmarks set by the Engineer in connection with the work herein provided for shall be carefully preserved by the Contractor and shall not be disturbed nor moved from the exact position and elevation as set by the Engineer. No excavated material shall be thrown over or against said stakes and, except where necessary to remove the stakes as the work progresses, all stakes shall be carefully preserved in the original position and elevation until the work has passed final inspection and been accepted. Stakes, which must be removed as the work progresses shall be so removed only upon the order of the Engineer.

All stakes, stones, monuments, and benchmarks disturbed or removed through carelessness or without proper authority will be reset at the expense of the Contractor.

### SUBMITTALS

The following documents shall be submitted by the Contractor:

1. Construction Schedule
2. Asphalt/Concrete job mix formula
3. Certification of Compliance for Asphalt
4. Materials Certifications
5. Manufacturer's Experience
6. Shop Drawings

### CONSTRUCTION SCHEDULE

The Contractor shall prepare a construction schedule for approval to the Engineer that will ensure the completion of the project within the time frame specified. This schedule must be provided to the Engineer for review a minimum of 3 days prior to the preconstruction meeting. The notice to proceed will not be issued until the schedule has been approved by the City. The construction schedule shall be in bar or network diagram form and show the start and completion dates for significant items of work in their respective phases. Significant

items of work includes but is not limited to: erosion control, removals, grading, the installation of base course, curb and gutter, paving, sidewalk, and pavement markings.

The construction schedule shall be updated on a bi-weekly basis. If it appears the rate of progress is such that the contract will not be completed within the time frame allowed the Contractor will be required to provide written documentation as to what measures they will take to complete the project within the specified time frame or to prosecute work in a satisfactory manner. Failure to submit the schedule on a bi-weekly basis will result in the City withholding the pay applications until the updated schedule is submitted.

### PORTABLE TOILET FACILITIES

The Contractor will be responsible for providing portable toilet facilities for the project at no cost to the City.

### ACCEPTANCE TESTING

The City will be responsible for taking the first acceptance test and a backup test if required. All subsequent tests required, due to failures, will be paid by the Contractor by deducting the cost from the pay request unless otherwise specified.

### DRAINAGE

Drainage is the Contractor's responsibility. Contractor shall be aware of existing drainage conditions and facilities, and shall provide for drainage during all phases of construction. Damage caused by improper temporary drainage facilities shall be repaired at the Contractor's expense and to the satisfaction of the Engineer.

### UTILITIES

All utilities shall be verified by the Contractor prior to starting work. Any time existing utilities impede the progress of work, the Contractor shall immediately notify the Engineer.

All utilities, whether privately or publicly owned, shall be moved, relocated, and/or replaced as necessary, by the respective utility company or companies except as noted in the plans. These modifications shall take place in advance of construction when applicable or when advised by the Engineer. No payment shall be made to the Contractor unless specified in the contract documents.

The Contractor shall safeguard all utilities and coordinate his efforts to coincide with utility work by others in order to minimize inconvenience to the public and utility companies. Any damage caused to the utilities due to Contractor carelessness shall be repaired at the Contractor's expense to the satisfaction of the utility owner.

Abandoned utilities (gas lines, telephone lines, etc.) encountered during construction shall be removed and disposed of by the Contractor. Costs associated with this work shall be incidental to the various bid items associated with work adjacent to the abandoned utility.

The Contractor shall be responsible for the coordination of all work associated with the disturbance, removal, or replacement of unidentified metallic natural gas mains or services when encountered. The Contractor shall, in advance and prior to proceeding with the work, coordinate with the City of Lennox, MidAmerican Energy Company, and all other companies related to the associated work.

Existing utility locations shown on drawings are approximate. There is no guarantee that the utilities shown include all such utilities or that the locations indicated are exact. The Contractor shall contact South Dakota One Call system, utility companies, and the City of Lennox to verify locations of all existing utilities prior to excavation.

The Contractor shall be responsible for notifying South Dakota One Call 1-800-781-7474 to have utilities field located.



SAFE ROUTES TO SCHOOL  
VARIOUS LOCATIONS  
LENNOX, SD

GENERAL NOTES  
DESIGNED BY: JDF  
DRAWN BY: PK  
CHECKED BY: MMH  
ACAD FILE: 5412 - General Notes  
DATE: 1/22/14  
BY: DATE:  
REVISIONS:

STOCKWELL ENGINEERS  
SIOUX FALLS, SD

SHEET NO.  
B-1

The following utility companies are known to have facilities on the project:

Knology Shawn Anderson (605) 236-7206	Xcel Energy Aaron Bickett (605) 339-8315
MidAmerican Energy Company Eric Berg (605) 373-6038	Southeastern Electric Tim Chance (605) 333-2859
City of Lennox Sewer & Water Roger Almond (605) 647-2286	City of Lennox Streets Dave Tipton (605) 647-2286

The Contractor shall cooperate with and coordinate his efforts to work with the utility companies and their contractors. Each bidder shall be responsible prior to bid letting, for determining the effects of utility work on the project work scope and schedule, and shall account for all such effects in his bid. No consideration will be given to the Contractor after the bid letting on account of utility work done by others.

**WASTE DISPOSAL SITE**

All material generated from this project for disposal must be disposed of at a state-permitted solid waste disposal site. Depending on what material is generated and whether it is contaminated or uncontaminated will determine which permitted facility can accept it. Permitted facilities include construction and demolition debris sites, restricted use sites, and regional landfills.

All costs associated with disposing of waste shall be incidental to the various contract items.

**REMOVALS**

**REMOVAL OF EXISTING CONCRETE PAVEMENT, SIDEWALK, AND CURB & GUTTER**

The concrete pavement, sidewalk, and curb & gutter shall be disposed of by the Contractor at a site approved by the Engineer. Payment for concrete pavement removal is included in the contract unit price per square yard for "Remove Concrete Pavement", concrete sidewalk removal is included in the contract unit price per square yard for "Remove Concrete Sidewalk". Payment for removal of concrete pavement and sidewalk shall be at the contract unit price per square yard, regardless of variations in thickness. Payment for concrete curb & gutter removal is included in the contract unit price per foot for "Remove Concrete Curb & Gutter". Payment shall be at the contract unit price per foot, regardless of variations in thickness.

**TABLE OF CONCRETE CURB AND GUTTER REMOVAL**

Station to	Station	L/R	Quantity (Ft)
15+38.43	15+44.43	L	6.0
16+07.81	16+10.81	L	3.0
20+19.35	20+22.10	L	15.0
5 <sup>th</sup> Avenue		L&R	21.0
Total:			45.0

**TABLE OF SIDEWALK REMOVAL**

Station to	Station	L/R	Quantity (SqYd)
30+23.04	32+38.48	R	117
5 <sup>th</sup> Avenue		L&R	127
Total:			244

**TABLE OF CONCRETE PAVEMENT REMOVAL**

Station to	Station	L/R	Quantity (SqYd)
5 <sup>th</sup> Avenue		R	12.1
Total:			12.1

**REMOVAL OF EXISTING ASPHALT PAVEMENT**

The asphalt concrete pavement shall be disposed of by the Contractor at a site approved by the Engineer. Payment for asphalt mat removal is included in the contract unit price per square yard for "Remove Asphalt Concrete Pavement". Payment shall be at the contract unit price per square yard, regardless of variations in thickness.

**TABLE OF ASPHALT CONCRETE PAVEMENT REMOVAL**

Station to	Station	L/R	Quantity (SqYd)
15+36.34	15+41.74	L	1.2
16+06.81	16+11.81	L	1.1
20+14.89	20+17.53	L	2.6
5 <sup>th</sup> Avenue		L&R	9.0
Total:			13.9

**CLEARING**

The lump sum payment for "Clearing" will be full compensation for all removal and disposal of trees less than six (6) inches in diameter, stumps, roots, and other vegetation designated for removal and mowing as required. The Engineer will establish right-of-way lines and construction limit lines prior to the start of clearing operations. The Engineer, at the start of the project, will mark the clearing limits.

Organic material shall not be used as fill in trenches or embankment. The Contractor shall dispose of all trees, brush, stumps, roots and other remains in a legal manner. Burying or burning of debris on or adjacent to the project shall be prohibited.

Erosion control measures shall be installed and functioning prior to clearing and excavation. See erosion control plans and notes.

**CLEAR AND GRUB TREE**

The unit price payment for "Clear and Grub Tree" will be full compensation for all removal and disposal of trees. The Engineer will establish right-of-way lines and construction lines prior to the start of clearing and grubbing operations.

Some trees may require the Contractor to have the tree topped by a licensed arborist, prior to clearing and grubbing the tree, due to the close proximity of physical features to remain. All costs associated with this work is considered incidental to the contract unit price for "Clear and Grub Tree".

**TABLE OF CLEAR & GRUB TREE**

Station	L/R	Size	Quantity (Each)
20+67.35	L	24"	1
Total:			1

**SAW EXISTING ASPHALT PAVEMENT**

Asphalt sawing shall be performed at all locations shown on the plans or as directed by the Engineer during construction. The pavement shall be sawed full depth. The Contractor shall exercise particular care to ensure that the adjacent surface is left intact and undamaged when removing the sawed out portion. Sawing of asphalt shall be incidental to the related removal bid items. Additional sawing required to form neat edges prior to paving may be necessary.

Where new surfacing is placed adjacent to existing asphalt concrete, a joint shall be sawed in the existing bituminous material prior to placing new materials.

**SAW EXISTING PCC PAVEMENT**

Concrete sawing shall be performed at all locations shown on the plans or as directed by the Engineer during construction. The pavement shall be sawed full depth. The Contractor shall exercise particular care to ensure that the adjacent surface is left intact and undamaged when removing the sawed out portion. Sawing of PCC pavement shall be incidental to the related removal items. Additional sawing required to form neat edges prior to paving may be necessary.

Where new Portland Cement Concrete (PCC) pavement is to be placed adjacent to existing PCC pavement, the existing PCC pavement shall be sawed full depth to a true line with a vertical face.

**GRADING**

TABLE OF EARTHWORK QUANTITIES	
Excavation	484.00
Stripping Topsoil	255.00
Asphalt and Concrete Removal	11.00
Total Unclassified Excavation	750.00

The volume of asphalt and concrete removal has been added to the Unclassified Excavation quantity. The quantity of asphalt and concrete removal shall be plans quantity and will not be adjusted according to field measurements.

**UNCLASSIFIED EXCAVATION**

Excavate the existing subgrade to provide for the required depth of aggregate base course and asphalt surfacing or gravel cushion and concrete surfacing. Earthwork shall be performed as shown on appropriate cross sections.

Due to the difficulty in making field measurements on this project and to expedite final payment, the computed quantity of Unclassified Excavation shall be the basis of payment for this item. No field measurements will be made for payments except when changes from the plan shown construction limits are ordered by the engineer.

The excess soil resulting from earthwork activities, if any, shall become the property of the owner. Contractor shall be responsible for its removal from the site and shall transport the excess soil to the Lennox Industrial Park.

**SEE SECTION C FOR TRAFFIC CONTROL NOTES**

**SEE SECTION D FOR EROSION CONTROL NOTES**



**SAFE ROUTES TO SCHOOL**  
VARIOUS LOCATIONS  
LENNOX, SD

DESIGNED BY: JDF  
DRAWN BY: PK  
CHECKED BY: MAM  
REVISIONS:  
ACAD FILE: 5412 - General Notes  
DATE: 1/22/14  
BY: DATE:

**STOCKWELL ENGINEERS**  
SIOUX FALLS, SD

SHEET NO.  
**B-2**

## SURFACING

### GRAVEL CUSHION

Gravel Cushion shall be in accordance with SDDOT Standard Specifications Section 260. Material for Gravel Cushion shall meet requirements set forth in SDDOT Standard Specifications Section 882.

Gravel Cushion shall be compacted with pneumatic rollers and shall continue on each lift of the gravel cushion until the surface is firm and unyielding, and attains a density of 97% of the maximum dry density as determined by SD 104, Method 4 and SD 105 or SD 114.

Payment shall be made on a per ton basis. Any gravel cushion delivered to the site without a scale ticket will not be measured for payment.

### ASPHALT CONCRETE FOR PATCHING

"Asphalt Concrete for Patching" shall be installed in locations shown in the plans or as directed by the Engineer. The minimum depth of all asphalt concrete patching shall be 4-inches.

Compaction of asphalt concrete shall be by the specified density method. The minimum density requirement is 92% (Rice Method) of specified density or to the satisfaction of the Engineer.

Asphalt concrete composite shall conform to the SDDOT Specifications for Class G, Asphalt Concrete. The top lift shall conform to Class G-2 for the mineral aggregate specifications. All lower lift(s) shall conform to Class G-1 for the mineral aggregate specifications unless otherwise noted or by direction of the Engineer. The surface course shall not exceed 2" in thickness when laid and compacted.

A maximum of 20% (by weight) of Recycled Asphalt Pavement (RAP) will be allowed in the asphalt concrete composite mix. RAP stockpiles containing concrete chunks, grass, dirt, wood, metal, coal tar, or other foreign or environmentally restricted materials shall not be used. No other recycled material will be allowed.

The asphalt cement used in the mixture shall be Performance Graded AASHTO Designation PG58-28 and shall conform to the current SDDOT Specifications. Certificates of compliance will be required on the asphalt concrete composite mix and the performance graded asphalt binder. The Engineer may accept the mixture on the basis of the certificate of compliance and visual inspection or may test the mixture for specification compliance.

Tack coat (SS-1h or CSS-1h) shall be applied between each lift of asphalt and along existing concrete and asphalt faces and any areas as determined by the Engineer at the rate of .05 gal/sq. yd. Payment for this work shall be incidental to the unit price for asphalt concrete composite.

### TABLE OF 4" ASPHALT CONCRETE PATCH

Station to	Station	L/R	Quantity (Ton)
15+36.34	15+41.74	L	0.5
16+06.81	16+11.81	L	0.5
20+14.89	20+17.53	L	1.0
5 <sup>th</sup> Avenue		L&R	3.0
Total:			5.0

### MISCELLANEOUS CONCRETE

Concrete for curb and gutter, sidewalk and driveway approaches shall be Class M-6 as detailed in the SDDOT Standards Specifications Section 462.

Concrete shall be cured using a curing compound in accordance with section 821.1 of the 2004 SDDOT Standard Specification for Roads and Bridges. A ½" preformed expansion material shall be placed between the sidewalk and other concrete items (back of curb, driveways, existing sidewalks, etc.). Payment for this item shall be incidental and included in the unit price for the respective bid item.

### TABLE OF CONCRETE CURB & GUTTER

Station to	Station	L/R	Quantity (SqFt)
15+38.43	15+44.43	L	6.0
16+07.81	16+10.81	L	3.0
20+19.35	20+22.10	L	15.0
5 <sup>th</sup> Avenue		L&R	21.0
Total:			45.0

### 6" PCC FILLET SECTIONS

Payment for "6" PCC Fillet Section" shall be based on plans quantity. If additions or reductions to the area of PCC fillet sections are ordered by the Engineer, payment will be made in accordance with the contract unit price per square yard for "6" PCC Fillet Section".

### TABLE OF 6" PCC FILLET SECTION

Station to	Station	L/R	Radius (Ft)	Quantity (SqYd)
5 <sup>th</sup> Avenue		R	10	7.3
5 <sup>th</sup> Avenue		R	10	4.8
Total:				12.1

### CONCRETE CURING

All concrete shall be cured in accordance with section 380.3.P.2 of the 2004 SDDOT Standard Specifications for Roads and Bridges except as modified in this note. All concrete shall be cured with a white pigmented linseed oil base emulsion compound when cured using the Impervious Membrane Method. Curing compound material shall be in accordance with section 821.1.D.

Apply liquid curing compound in a fine spray to form a continuous, uniform solid white opaque coverage (equal to a white sheet of typing paper) on the horizontal surface and vertical edges of pavement, curbs and back of curbs immediately after surface moisture has disappeared, but no later than 30 minutes after finishing. Concrete edges exposed by the removal of forms shall also be cured. Apply the curing compound in 2 equal applications, in opposing directions, to ensure a uniform coverage. With the approval of the Engineer, the timing of cure application may be adjusted due to varying weather conditions and concrete mix properties to ensure acceptable macrotexture is achieved.

Failure to comply with the provisions may result in a price adjustment or rejection of the concrete.

### TYPE 1 DETECTABLE WARNINGS

Detectable warnings shall be in compliance with the Americans with Disability Act regulations.

The detectable warnings shall be installed according to the manufacturer's installation instructions.

A concrete thickness equal to the adjacent concrete sidewalk thickness and 2 inches of granular cushion material shall be placed below the Type 1 Detectable Warnings. When concrete is placed below the detectable warnings then the concrete thickness shall be transitioned at the rate of 1" per foot to match the adjacent concrete sidewalk thickness.

The detectable warnings shall be a brick red color for application in concrete curb ramps. Cast iron plates may be a natural patina (weathered steel).

When Type 1 Detectable Warnings are specified, the Contractor shall furnish and install only one of the products listed in the Type 1 Detectable Warnings table.

#### Type 1 Detectable Warnings

Product	Manufacturer
Detectable Warning Plate Cast Iron Plate	Neenah Foundry Company Neenah, WI 800-558-5075 <a href="http://www.neenahfoundry.com/">http://www.neenahfoundry.com/</a>

Detectable Warning Plate  
Cast Iron Plate

Deeter Foundry  
Lincoln, NE  
800-234-7466  
<http://www.deeter.com/>

Detectable Warning Plate  
Cast Iron Plate

East Jordan Iron Works, Inc.  
301 Spring Street  
East Jordan, MI 49727  
800-626-4653  
<http://www.eiwi.com>

CAST-DWD  
Cast Iron Plate

Key 3 Casting (Northern Foundry)  
555 West 25<sup>th</sup> Street  
Hibbing, MN 55746  
218-263-8871  
<http://key3casting.com>

Pre-Manufactured  
Detectable Warning Paver  
Concrete Panel

M.R. Castings, Inc.  
PO Box 34232  
Omaha, NE 68134  
402-510-3279  
<http://mrcastings.com/>

ADA Arcis Tactile Detectable  
Warning Tile  
Concrete Panel Reinforced with  
Stainless Steel Prestress Strands

Arcis Corporation  
10680 NW 289<sup>th</sup> Place  
PO Box 1250  
North Plains, Oregon 97133  
503-647-5042  
<http://www.arcis-corp.com/#/tactile/>

CASTinTACT  
Concrete Panel Reinforced with  
Stainless Steel Prestress Strands

MASCO Mason Supply  
6018 234<sup>th</sup> St SE  
Woodinville, Washington 98072  
425-487-6161  
<http://www.castintact.com>

CASTinTACT 3  
Concrete Panel Enhanced with  
Microsilica and Fiber Reinforced

MASCO Mason Supply  
6018 234<sup>th</sup> St SE  
Woodinville, Washington 98072  
425-487-6161  
<http://www.castintact.com>

Detectable Warning Tile  
Composite  
Replaceable Wet-Set

ADA Solutions, Inc.  
North Billerica, MA 01862  
800-372-0519  
<http://www.adatile.com>

Access Tile  
Composite  
Replaceable Cast in Place

Access Products Inc.  
241 Main Street, Suite 100  
Buffalo, NY 14203  
888-679-4022  
<http://www.accessstile.com/>



**SAFE ROUTES TO SCHOOL**  
VARIOUS LOCATIONS  
LENNOX, SD

GENERAL NOTES

DESIGNED BY: JDF  
DRAWN BY: PK  
CHECKED BY: MAM  
REVISIONS:  
ACAD FILE: 5412 - General Notes  
DATE: 1/22/14  
BY: DATE:

**STOCKWELL ENGINEERS**  
SIOUX FALLS, SD

SHEET NO.  
**B-3**



Armorcast Detectable Warning  
Tile  
Composite  
Replaceable Wet-Set

Armorcast Products Company  
13230 Saticoy Street  
North Hollywood, CA 91605  
818-982-3600  
<http://www.armorcastprod.com/>

**TABLE OF TYPE 1 DETECTABLE WARNINGS**

Station	L/R	Quantity (SqFt)
11+58.32	R	10
14+72.55	R	10
15+27.00	L	10
17+06.89	L	10
20+21.21	L	10
30+26.08	R	10
5 <sup>th</sup> Avenue	L&R	30
Total:		90

**TABLE OF 6" PCC APPROACH PAVEMENT**

Station	L/R	Opening (Ft)	Type	Quantity (SqYd)
12+74.40	R	14	A	7.9
Total:				7.9

**CONCRETE SIDEWALK**

The concrete sidewalk shall be constructed in accordance with Section 651 of the Standard Specifications. See the Pavement Layout section of the plans for sidewalk details.

**TABLE OF 5" CONCRETE SIDEWALK**

Station	to	Station	L/R	Quantity (SqFt)
0+33.09		3+83.77	L	2104
10+07.20		12+69.40	R	1068
12+79.40		14+77.37	R	1191
11+78.56		14+63.70	L	1711
20+19.35		23+34.74	L	1968
30+23.03		32+38.48	R	1300
5 <sup>th</sup> Avenue			L&R	1192
Total:				10534

**TABLE OF 6" CONCRETE SIDEWALK**

Station	to	Station	L/R	Quantity (SqFt)
12+69.40		12+79.40	R	60
14+63.70		17+10.22	L	1241
23+34.74		23+73.36	L	232
Total:				1533

**SAFE ROUTES TO SCHOOL**

VARIOUS LOCATIONS  
LENNOX, SD

GENERAL NOTES

DESIGNED BY: JDF  
DRAWN BY: PK  
CHECKED BY: MMM  
REVISIONS:  
ACAD FILE: 5412 - General Notes  
DATE: 1/22/14  
BY: DATE:

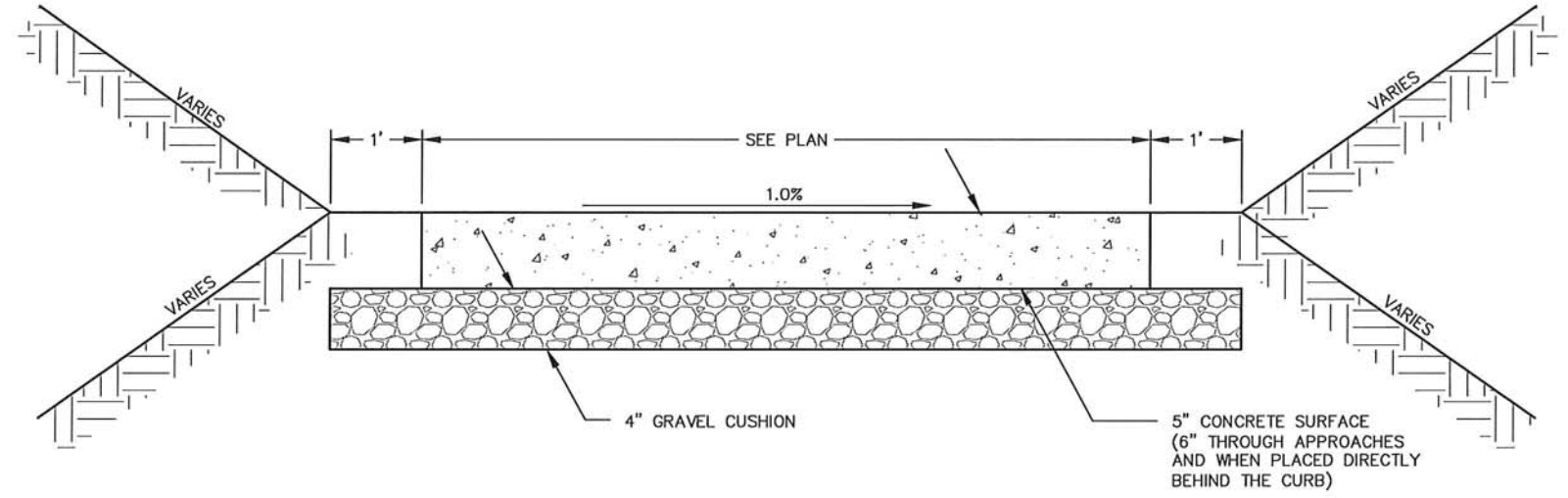
**STOCKWELL ENGINEERS**  
SIOUX FALLS, SD



SHEET NO.

**B-4**





**PEDESTRIAN PATH SECTION**



TYPICAL SECTIONS

DESIGNED BY: JDF	ACAD FILE: S412 - Typical Sections.dwg
DRAWN BY: PK	DATE: 1/22/14
CHECKED BY: MAM	BY: DATE:
REVISIONS:	BY: DATE:

## TRAFFIC CONTROL

### SEQUENCE OF OPERATIONS

The following Sequence of Operation shall be followed by the Contractor unless an alternate Sequence of Operations is submitted in writing and approved by the Engineer.

Contractor shall erect Traffic Control prior to the start of the project. Work included in the project shall include the construction of concrete pathways on 4<sup>th</sup> Avenue, McKinley Street, 8<sup>th</sup> Avenue, Blaine Street, Elm Street and Main Street. Work shall also include the installation of pedestrian crossing beacons and speed zone beacons. Work shall also include but may not be limited to removals, earthwork operations, asphalt patching, concrete curb and gutter, gravel surfacing and site restoration.

### Special Conditions

- Contractor shall maintain access to vehicular traffic at all times. When necessary, Contractor may close a portion of the street adjacent to the curb and gutter utilizing cones or barrels.

### GENERAL MAINTENANCE OF TRAFFIC

- Installation of traffic control shall conform to the Manual on Uniform Traffic Control Devices (MUTCD) 2009 Edition unless otherwise modified in the plans.
- The Contractor shall notify the engineer and City 48 hours prior to start of construction and before any substantial traffic control changes.

Installation of and changes in traffic control shall not be made before 8:30 AM.

- Removing, relocating, salvaging, and resetting of existing traffic control devices, including delineation, shall be the responsibility of the Contractor. Any delineators and signs damaged or lost shall be replaced by the Contractor at no cost to the City. Signs shall be removed only as necessary for completion of the work. Payment for removing, salvaging, installing, and/or resetting of signs shall be incidental to the related work.
- Storage of vehicles and equipment shall be outside the clear zone and as near as possible to the right-of-way line. Contractor's employees should mobilize at a location off the right-of-way and arrive at the work sites in a minimum number of vehicles necessary to perform the work.
- Indiscriminate driving and parking of vehicles within the right-of-way will not be permitted. Any damage to the vegetation, surfacing, embankment, delineators and existing signs resulting from such indiscriminate use shall be repaired and/or restored by the Contractor, at no expense to the City, and to the satisfaction of the Engineer.
- All breakaway sign supports shall comply with FHWA NCHRP 350 crash-worthy requirements. The Contractor shall provide post installation details at the preconstruction meeting for all steel post breakaway sign support assemblies.
- Installation, maintenance, relocation and removal of Type I and II barricades, cones, vertical panels, drums, barricade warning lights, watchmen, tubular markers and flags shall be included in the lump sum price bid for "Traffic Control Miscellaneous".
- The Contractor or designated traffic control subcontractor shall ensure the adequacy, legibility, and reflectivity of each sign and device. Sign washing shall be considered incidental to Traffic Control and required as directed by the Engineer.
- Flagger warning signs shall be installed when using flaggers to direct traffic. Flaggers shall wear appropriate safety clothing and shall use a Stop/Slow paddle. Payment for flagging will be at the contract unit price per hour if a bid item has been included. If no bid item is included, flagging shall be incidental to "Traffic Control, Miscellaneous".

### PEDESTRIAN TRAFFIC

The Contractor shall protect and restrict all pedestrians from work areas. Safety fence shall be installed around all work areas that are adjacent to pedestrian walkways and at other locations as designated by the Engineer. Payment for all work and associated materials shall be incidental to the contract lump sum price for "Traffic Control, Miscellaneous".

### CHANNELIZING DEVICES

In transition and taper sections, channelizing devices shall be reflectorized drums. In tangent sections, 42" tall grabber cones may be used instead of reflectorized drums. Payment for channelizing devices shall be incidental to the lump sum bid price for "Traffic Control, Miscellaneous".

### STANDARD SPACING FOR SIGNS, TAPERS, AND CHANNELIZING DEVICES

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet)				Taper Length (Feet) (L)	Spacing of Channelizing Devices (Feet) (G)
	(A)	(B)	(C)	(D)		
0 - 30	200				180	25
35 - 40	350				320	25
45 - 50	500				600	50
55	500				660	50
	(A)	(B)	(C)	(D)		
60 - 65	500	1000	1300	1600	780	50
75	500	1000	1300	1600	1125	50

### ITEMIZED LIST FOR TRAFFIC CONTROL

SIGN CODE	SIGN SIZE	DESCRIPTION	PHASE 1	MAX REQUIRED	UNITS PER SIGN	UNITS
W20-1	48" x 48"	ROAD WORK ##### FT. OR AHEAD	21	21	34	714
<b>GRAND TOTAL =</b>						<b>714</b>

SAFE ROUTES TO SCHOOL  
VARIOUS LOCATIONS  
LENNOX, SD

TRAFFIC CONTROL NOTES  
DESIGNED BY: JDF  
DRAWN BY: PK  
CHECKED BY: JGB  
REVISIONS:  
ACAD FILE: 5412 - Traffic Control Notes.docx  
DATE: 1/22/14  
BY: DATE

STOCKWELL ENGINEERS  
SIOUX FALLS, SD

SHEET NO.

C-1





**NOTE:**  
 CONTRACTOR SHALL BE REQUIRED TO UTILIZE CONES OR BARRELS DURING ANY WORK WHICH REQUIRES A LANE CLOSURE. THIS WORK SHALL BE COVERED BY THE LUMP SUM BID ITEM "TRAFFIC CONTROL MISCELLANEOUS".



SAFE ROUTES TO SCHOOL

TRAFFIC CONTROL  
 DESIGNED BY: JF  
 ACAD. FILE: 5412 - Traffic Control Plan  
 CHECKED BY: JMM  
 DATE: 1/22/14  
 REVISIONS:  
 BY: DATE:  
 BY: DATE:

**STOCKWELL ENGINEERS**  
 SIOUX FALLS, SD

SHEET NO.  
**C-2**

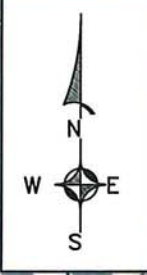
LENNOX, SD



ROAD WORK AHEAD  
5 EA (W20-1)

ROAD WORK AHEAD  
4 EA (W20-1)

ROAD WORK AHEAD  
5 EA (W20-1)



**NOTE:**  
CONTRACTOR SHALL BE REQUIRED TO UTILIZE CONES OR BARRELS DURING ANY WORK WHICH REQUIRES A LANE CLOSURE. THIS WORK SHALL BE COVERED BY THE LUMP SUM BID ITEM "TRAFFIC CONTROL MISCELLANEOUS".



SAFE ROUTES TO SCHOOL  
LENNOX, SD

TRAFFIC CONTROL  
DESIGNED BY: JF  
ACAD FILE: SAFR - TRAFFIC CONTROL PLAN  
CHECKED BY: JF  
REVISIONS:  
BY: DATE:  
BY: DATE:

STOCKWELL ENGINEERS  
SIOUX FALLS, SD

SHEET NO.  
C-3

**EROSION CONTROL NOTES**

**REMOVE AND REPLACE TOPSOIL**

The estimated amount of topsoil to be removed and replaced is 255 CuYd.

All cost associated with removing and replacing the topsoil along areas to be resurfaced shall be incidental to the lump sum price for "Remove and Replace Topsoil".

**DRILLS**

In addition to the drills specified in Section 730 of the Standard Specifications, other types of drills including no-till drills will be allowed as long as they have baffles, partitions, agitators, or augers which keep the seed distributed throughout the seed box and the seed is planted at a depth of ¼" to ½".

**FERTILIZING**

A commercial fertilizer with a minimum guaranteed analysis of 24-5-10 50% SCU with Prospect, or an approved alternate fertilizer shall be applied to all areas designated for permanent seeding. The application rate of fertilizer shall be 150 pounds per acre.

**PERMANENT SEEDING**

The areas to be seeded comprise of all newly graded areas within the project limits except for the top of roadways and temporary easements under cultivation.

All permanent seed shall be planted in the topsoil at a depth of ¼" to ½".

All seed broadcast must be raked or dragged in (incorporated) within the top ¼" to ½" of topsoil when possible. This requirement may be waived by the Engineer during construction when raking or dragging is deemed not feasible by conventional methods.

Special Permanent Seed Mixture 1 shall consist of the following:

Seed Mixes: Seed Mix shall be Millborn's Tough Play or approved equal. Seed mix shall consist of 90% Turf Type Tall Fescue (minimum 3 varieties) and 10% Kentucky Bluegrass. Purity shall be 97% or greater. Germination shall be 85% or greater. Maximum other crop content and weed content shall be 0.1%.

Seed shall be placed April 1 through June 1 or August 15 through September 15. Seed mix shall be applied at the rate of 9 pounds per 1,000 square feet.

**FIBER MULCHING**

Fiber mulch shall be applied in a separate operation following permanent seeding.

An additional 2% by weight of tackifier shall be added to the fiber mulch product selected from the list below. If the product selected has guar gum tackifier included, then the additional 2% of tackifier shall be guar gum. If the product selected has synthetic tackifier included, then the additional 2% of tackifier shall be synthetic.

Fiber mulch shall be applied at the rate of 2000 pounds per acre.

The Contractor shall allow the fiber mulch to cure a minimum of 18 hours prior to watering or any storm event to ensure proper cohesion between the soil and fiber particles.

All costs for the additional tackifier added to the fiber mulch including labor, equipment, and materials shall be incidental to the contract unit price per pound for "Fiber Mulching".

The fiber mulch used on this project shall be one from the list below:

<u>Product</u>	<u>Manufacturer</u>
Mat-Fiber Plus	Mat, Inc. Floodwood, MN Phone: 1-888-477-3028
Conwed Fibers Hydro Mulch 2000	Profile Products LLC Buffalo Grove, IL Phone: 1-800-366-1180 <a href="http://www.conwedfibers.com">www.conwedfibers.com</a>

EcoFibre Plus Tackifier	Profile Products LLC Buffalo Grove, IL Phone: 1-800-366-1180 <a href="http://www.conwedfibers.com">www.conwedfibers.com</a>
Terra Wood with Tacking Agent 3	Profile Products LLC Buffalo Grove, IL Phone: 1-800-366-1180 <a href="http://www.conwedfibers.com">www.conwedfibers.com</a>
Bindex Wood WT	American Excelsior Co. Arlington, TX Phone: 1-800-777-7645 <a href="http://www.curlex.com">www.curlex.com</a>
Second Nature Wood Fiber Plus Mulch	Central Fiber LLC Canton, OH Phone: (330) 452-2630 <a href="http://www.centralfiber.com">www.centralfiber.com</a>

**TABLE OF FIBER MULCHING**

Station	to	Station	L/R	Quantity (Lb)
0+28		3+94	L	301
10+02		14+79	R	264
11+61		17+16	L	249
20+19		23+80	L	212
30+23		32+49	R	164
Total:				1190

**SEDIMENT CONTROL AT INLETS WITH FRAMES AND GRATES**

This type of sediment control device should be used where there is pavement in the vicinity of the drop inlets and storm water or sediment could possibly enter the frame and grate. Sediment Control at Inlets with Frame and Grates shall be installed prior to working in the vicinity of the drop inlets.

The Contractor shall be responsible for maintaining and repairing the sediment control devices for the duration of the project for which sediment control measures are required. Maintenance shall be scheduled to prevent storm water from backing up into the driving lane.

"Sediment Control at Inlets with Frames and Grates" will be paid for one time at each location, regardless of the number of times the sediment control devices are installed, inspected, cleaned, removed, repaired, or replaced. All costs associated with furnishing, installing, inspecting, maintaining, cleaning, sediment removal, and repairing Sediment Control at Inlets with Frames and Grates shall be incidental to the contract unit price per each for "Sediment Control at Inlet with Frame and Grate".

Sediment collection devices shall be:

A commercial made sediment collection device from the "Sediment Control at Inlet with Frame and Grate" list or an approved equal. The device shall be installed in reinforced concrete drop inlets according to the manufacturer's recommendations.

Sediment Control at Inlet with Frame and Grate Approved List:

<u>Product</u>	<u>Manufacturer</u>
InfraSafe Debris Collection Device with filter sock	Royal Environmental Systems, Inc. Stacy, MN Phone: 1-800-817-3240 <a href="http://www.royalenterprises.net">www.royalenterprises.net</a>
Dandy Curb Sack	Dandy Products Inc. Dublin, OH Phone: 1-800-591-2284

Silt Trapper	<a href="http://www.dandyproducts.com">www.dandyproducts.com</a> Storm Water Solutions Lakeville, MN Phone: 1-952-461-4376 <a href="http://www.silttrapper.com">www.silttrapper.com</a>
DIP Basket	Skyview Construction Co., LLC Waubay, SD Phone: 1-605-520-0555 <a href="http://www.skyviewconst.com">www.skyviewconst.com</a>
FLEXSTORM Inlet Filters	Inlet and Pipe Protection, Inc. Naperville, IL Phone: 1-866-287-8655 <a href="http://www.inletfilters.com">www.inletfilters.com</a>
GR-8 Guard or Combo Guard	ERTEC Environmental Systems LLC Alameda, CA Phone: 1-866-521-0724 <a href="http://www.ertecsystems.com">www.ertecsystems.com</a>
Sediment Catchers	Shaun Jensen Brookings, SD Phone: 1-605-690-4950
Grate FX, Slammer, or VertPro	Enviroscape ECM, Ltd. Oakwood, OH Phone: 1-419-594-3210 <a href="http://www.strawblanket.com">www.strawblanket.com</a>

**TABLE OF SEDIMENT CONTROL AT INLETS WITH FRAMES AND GRATES**

Station	L/R	Quantity (Each)
14+69	L	1
Total:		1

**STREET SWEEPING**

Vehicle tracking of sediment from the construction site shall be minimized. Street sweeping shall be used if erosion and sediment control best management practices are not adequate to prevent sediment from being tracked onto the street.

The Contractor shall use a pickup broom having integral self-contained storage to clean the roadway. The pickup broom used shall be a minimum of 6 feet wide and have working gutter brooms.

At a minimum, sweeping will be required:  
1. Prior to opening any segment or roadway to traffic.

All costs for cleaning the roadway with a pickup broom shall be incidental to the contract unit price per hour for "Sweeping".



SAFE ROUTES TO SCHOOL  
VARIOUS LOCATIONS  
LENNOX, SD

EROSION CONTROL NOTES  
ACAD FILE: 5412 - Erosion Control Notes.docx  
DATE: 1/22/14  
DESIGNED BY: JDF  
DRAWN BY: PK  
CHECKED BY: MMH  
REVISIONS:  
BY: DATE

STOCKWELL ENGINEERS  
SIOUX FALLS, SD

SHEET NO.  
D-1

**STORM WATER POLLUTION PREVENTION PLAN CHECKLIST**  
 (The numbers right of the title headings are reference numbers to the GENERAL PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES)

❖ **SITE DESCRIPTION (4.2 1)**

- Project Limits: See Title Sheet (4.2 1.b)
- Project Description: See Title Sheet (4.2 1.a)
- Site Map(s): See Title Sheet and Plans (4.2 1.f. (1)-(6))
- Major Soil Disturbing Activities (check all that apply)
  - Clearing and grubbing
  - Excavation/borrow
  - Grading and shaping
  - Filling
  - Cutting and filling
  - Other (describe):
- Total Project Area 0.89 AC (4.2 1.b.)
- Total Area To Be Disturbed 0.89 AC (4.2 1.b.)
- Existing Vegetative Cover (%) 95
- Soil Properties: AASHTO Soil or USDA-NRCS Soil Series Classification (4.2 1. d.)
- Name of Receiving Water Body/Bodies Long Creek (4.2 1.e.)

❖ **ORDER OF CONSTRUCTION ACTIVITIES (4.2 1.c.)**

- (Stabilization measures shall be initiated as soon as possible, but in no case later than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased. Initiation of final or temporary stabilization may exceed the 14-day limit if earth disturbing activities will be resumed within 21 days.)
- Install inlet sediment protection.
  - Clearing and grubbing.
  - Remove and store topsoil.
  - Complete final paving and sealing of concrete.
  - Complete traffic control installation and protection devices.
  - Reseed areas disturbed by removal activities.

❖ **EROSION AND SEDIMENT CONTROLS (4.2 2.a.(1)(a)-(f))**

- (Check all that apply)
- Stabilization Practices (See Detail Plan Sheets)
    - Temporary Seeding (Cover Crop Seeding)
    - Permanent Seeding
    - Sodding
    - Planting (Woody Vegetation for Soil Stabilization)
    - Mulching (Grass Hay or Straw)
    - Hydraulic Mulch (Wood Fiber Mulch)
    - Soil Stabilizer
    - Bonded Fiber Matrix
    - Erosion Control Blankets or Mats
    - Vegetation Buffer Strips
    - Roughened Surface (e.g. tracking)
    - Dust Control
    - Other:
  - Structural Temporary Erosion and Sediment Controls
    - Silt Fence
    - Floating Silt Curtain
    - Straw Bale Check
    - Temporary Berm
    - Temporary Slope Drain
    - Straw Wattles or Rolls
    - Turf Reinforcement Mat
    - Rip Rap
    - Gabions
    - Rock Check Dams
    - Sediment Traps/Basins
    - Inlet Protection
    - Outlet Protection
    - Surface Inlet Protection (Area Drain)
    - Curb Inlet Protection
    - Stabilized Construction Entrances
    - Entrance/Exit Equipment Tire Wash
    - Interceptor Ditch
    - Concrete Washout Area
    - Temporary Diversion Channel
    - Work Platform
    - Temporary Water Barrier
    - Temporary Water Crossing

- Other:
- **Wetland Avoidance**  
Will construction and/or erosion and sediment controls impinge on regulated wetlands? Yes  No  If yes, the structural and erosion and sediment controls have been included in the total project wetland impacts and have been included in the 404 permit process with the USACE.
- **Storm Water Management (4.2 2.b., (1) and (2))**  
Storm water management will be handled by temporary controls outlined in "EROSION AND SEDIMENT CONTROLS" above, and any permanent controls needed to meet permanent storm water management needs in the post construction period. Permanent controls will be shown on the plans and noted as permanent.
- **Other Storm Water Controls (4.2 2.c., (1) and (2))**
  - **Waste Disposal**  
All liquid waste materials will be collected and stored in sealed metal containers approved by the project engineer. All trash and construction debris from the site will be deposited in the approved containers. Containers will be serviced as necessary, and the trash will be hauled to an approved disposal site or licensed landfill. All onsite personnel will be instructed in the proper procedures for waste disposal, and notices stating proper practices will be posted in the field office. The general contractor's representative responsible for the conduct of work on the site will be responsible for seeing waste disposal procedures are followed.
  - **Hazardous Waste**  
All hazardous waste materials will be disposed of in a manner specified by local or state regulations or by the manufacturer. Site personnel will be instructed in these practices, and the individual designated as the contractor's on-site representative will be responsible for seeing that these practices are followed.
  - **Sanitary Waste**  
Portable sanitary facilities will be provided on all construction sites. Sanitary waste will be collected from the portable units in a timely manner by a licensed waste management contractor or as required by any local regulations.
- ❖ **Maintenance and Inspection (4.2 3. and 4.2 4.)**
  - **Maintenance and Inspection Practices**
    - Inspections will be conducted at least one time per week and after a storm event of 0.50 inches or greater.
    - All controls will be maintained in good working order. Necessary repairs will be initiated within 24 hours of the site inspection report.
    - Silt fence will be inspected for depth of sediment and for tears in order to ensure the fabric is securely attached to the posts and that the posts are well anchored. Sediment buildup will be removed from the silt fence when it reaches 1/3 of the height of the silt fence.
    - Sediment basins and traps will be checked. Sediment will be removed when depth reaches approximately 50 percent of the structure's capacity, and at the conclusion of the construction.
    - Check dams will be inspected for stability. Sediment will be removed when depth reaches 1/2 the height of the dam.
    - All seeded areas will be checked for bare spots, washouts, and vigorous growth free of significant weed infestations.
    - Inspection and maintenance reports will be prepared on form DOT 298 for each site inspection, this form will also be used to document changes to the SWPPP. A copy of the completed inspection form will be filed with the SWPPP documents.
    - The SDDOT Project Engineer and contractor's site superintendent are responsible for inspections. Maintenance, repair activities are the responsibility of the contractor. The SDDOT Project Engineer will complete the inspection and maintenance reports and distribute copies per the distribution instructions on DOT 298.

- ❖ **Non-Storm Water Discharges (3.0)**  
The following non-storm water discharges are anticipated during the course of this project (check all that apply).
  - Discharges from water line flushing.
  - Pavement wash-water, where no spills or leaks of toxic or hazardous materials have occurred.
  - Uncontaminated ground water associated with dewatering activities.

- ❖ **Materials Inventory (4.2. 2.c.(2))**  
The following materials or substances are expected to be present on the site during the construction period. These materials will be handled as noted under the headings "EROSION AND SEDIMENT CONTROLS" and "SPILL PREVENTION" (check all that apply).
  - Concrete and Portland Cement
  - Detergents

- Paints
- Metals
- Bituminous Materials
- Petroleum Based Products
- Cleaning Solvents
- Wood
- Cure
- Texture
- Chemical Fertilizers
- Other:

❖ **Spill Prevention (4.2 2.c.(2))**

- **Material Management**
  - **Housekeeping**
    - Only needed products will be stored on-site by the contractor.
    - Except for bulk materials the contractor will store all materials under cover and in appropriate containers.
    - Products must be stored in original containers and labeled.
    - Material mixing will be conducted in accordance with the manufacturer's recommendations.
    - When possible, all products will be completely used before properly disposing of the container off site.
    - The manufacturer's directions for disposal of materials and containers will be followed.
    - The contractor's site superintendent will inspect materials storage areas regularly to ensure proper use and disposal.
    - Dust generated will be controlled in an environmentally safe manner.
    - Vegetation areas not essential to the construction project will be preserved and maintained as noted on the plans.
  - **Hazardous Materials**
    - Products will be kept in original containers unless the container is not resealable.
    - Original labels and material safety data sheets will be retained in a safe place to relay important product information.
    - If surplus product must be disposed of, manufacturer's label directions for disposal will be followed.
    - Maintenance and repair of all equipment and vehicles involving oil changes, hydraulic system drain down, de-greasing operations, fuel tank drain down and removal, and other activities which may result in the accidental release of contaminants will be conducted on an impervious surface and under cover during wet weather to prevent the release of contaminants onto the ground.
    - Wheel wash water will be collected and allowed to settle out suspended solids prior to discharge. Wheel wash water will not be discharged directly into any storm water system or storm water treatment system.
    - Potential pH-modifying materials such as: bulk cement, cement kiln dust, fly ash, new concrete washings, concrete pumping, residuals from concrete saw cutting (either wet or dry), and mixer washout waters will be collected on site and managed to prevent contamination of storm water runoff.



SAFE ROUTES TO SCHOOL  
VARIOUS LOCATIONS  
LENNOX, SD

EROSION CONTROL NOTES  
ACAD FILE: 542 - Erosion Control Notes.docx  
DATE: 1/22/14  
DESIGNED BY: JDF  
DRAWN BY: PK  
CHECKED BY: NMM  
REVISIONS:  
BY: DATE:

STOCKWELL ENGINEERS  
SIOUX FALLS, SD

➤ **Product Specific Practices (6.8)**

▪ **Petroleum Products**

All on-site vehicles will be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers which are clearly labeled.

▪ **Fertilizers**

Fertilizers will be applied only in the amounts specified by the SDDOT. Once applied, fertilizers will be worked into the soil to limit the exposure to storm water. Fertilizers will be stored in an enclosed area. The contents of partially used fertilizer bags will be transferred to sealable containers to avoid spills.

▪ **Paints**

All containers will be tightly sealed and stored when not required for use. The excess will be disposed of according to the manufacturer's instructions and any applicable state and local regulations.

▪ **Concrete Trucks**

Contractors will provide designated truck washout areas on the site. These areas must be self contained and not connected to any storm water outlet of the site. Upon completion of construction washout areas will be properly stabilized.

➤ **Spill Control Practices (4.2 2 c.(2))**

In addition to the previous housekeeping and management practices, the following practices will be followed for spill prevention and cleanup if needed.

- For all hazardous materials stored on site, the manufacturer's recommended methods for spill clean up will be clearly posted. Site personnel will be made aware of the procedures and the locations of the information and cleanup supplies.
- Appropriate cleanup materials and equipment will be maintained by the contractor in the materials storage area on-site. As appropriate, equipment and materials may include items such as brooms, dust pans, mops, rags, gloves, goggles, kitty litter, sand, sawdust, and plastic and metal trash containers specifically for clean up purposes.
- All spills will be cleaned immediately after discovery and the materials disposed of properly.
- The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
- After a spill a report will be prepared describing the spill, what caused it, and the cleanup measures taken. The spill prevention plan will be adjusted to include measures to prevent this type of spill from reoccurring, as well as clean up instructions in the event of reoccurrences.
- The contractor's site superintendent, responsible for day-to-day operations, will be the spill prevention and cleanup coordinator. The contractor is responsible for ensuring that the site superintendent has had appropriate training for hazardous materials handling, spill management, and cleanup.

➤ **Spill Response (4.2 2 c.(2))**

The primary objective in responding to a spill is to quickly contain the material(s) and prevent or minimize migration into storm water runoff and conveyance systems. If the release has impacted on-site storm water, it is critical to contain the released materials on-site and prevent their release into receiving waters. If a spill of pollutants threatens storm water or surface water at the site, the spill response procedures outlined below must be implemented in a timely manner to prevent the release of pollutants.

- The contractor's site superintendent will be notified immediately when a spill or the threat of a spill is observed. The superintendent will assess the situation and determine the appropriate response.
- If spills represent an imminent threat of escaping erosion and sediment controls and entering receiving waters, personnel will be directed to respond immediately to contain the release and notify the superintendent after the situation has been stabilized.
- Spill kits containing appropriate materials and equipment for spill response and cleanup will be maintained by the contractor at the site.
- If oil sheen is observed on surface water (e.g. settling ponds, detention ponds, swales), action will be taken immediately to remove the material causing the sheen. The contractor will use appropriate materials to contain and absorb the spill. The source of the oil sheen will also be identified and removed or repaired as necessary to prevent further releases.
- If a spill occurs the superintendent or the superintendent's designee will be responsible for completing the spill reporting form and for reporting the spill to SD DENR.
- Personnel with primary responsibility for spill response and clean up will receive training by the contractor's site superintendent or designee. The training must include identifying the location of the spill kits and other spill response equipment and the use of spill response materials.
- Spill response equipment will be inspected and maintained as necessary to replace any materials used in spill response activities.

❖ **Spill Notification**

In the event of a spill, the contractor's site superintendent will make the appropriate notification(s), consistent with the following procedures:

- A release or spill of a regulated substance (includes petroleum and petroleum products) must be reported to DENR immediately **if any one of the following** conditions exists:
  - The discharge threatens or is in a position to threaten the waters of the state (surface water or ground water).
  - The discharge causes an immediate danger to human health or safety.
  - The discharge exceeds 25 gallons.
  - The discharge causes a sheen on surface water.
  - The discharge of any substance that exceeds the ground water quality standards of ARSD (Administrative Rules of South Dakota) chapter 74:51:01.
  - The discharge of any substance that exceeds the surface water quality standards of ARSD chapter 74:51:01.
  - The discharge of any substance that harms or threatens to harm wildlife or aquatic life.
  - The discharge of crude oil in field activities under SDCL (South Dakota Codified Laws) chapter 45-9 is greater than 1 barrel (42 gallons).

To report a release or spill, call DENR at 605-773-3296 during regular office hours (8 a.m. to 5 p.m. Central time). To report the release after hours, on weekends or holidays, call State Radio Communications at 605-773-3231. Reporting the release to DENR does not meet any obligation for reporting to other state, local, or federal agencies. Therefore, the responsible person must also contact local authorities to determine the local reporting requirements for releases. DENR recommends that spills also be reported to the National Response Center at (800) 424-8802.

❖ **Construction Changes (4.4)**

When changes are made to the construction project that will require alterations in the temporary erosion controls of the site, the Storm Water Pollution Prevention Plan (SWPPP) will be amended to provide appropriate protection to disturbed areas, all storm water structures, and adjacent waters. The SDDOT Project Engineer will modify the SWPPP plan (DOT 298) and drawings to reflect the needed changes. Copies of changes will be routed per DOT 298. Copies of forms and the SWPPP will be retained in a designated place for review over the course of the project.

❖ **CERTIFICATIONS**

➤ **Certification of Compliance with Federal, State, and Local Regulations**

The Storm Water Pollution Prevention Plan (SWPPP) for this project reflects the requirements of all local municipal jurisdictions for storm water management and sediment and erosion control as established by ordinance, as well as other state and federal requirements for sediment and erosion control plans, permits, notices or documentation as appropriate.

➤ **South Dakota Department of Transportation**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

*Tom Lehmann*

Authorized Signature (See the General Permit, Section 6.7.1.C.)

➤ **Prime Contractor**

This section is to be executed by the General Contractor after the award of the contract. This section may be executed any time there is a change in the Prime Contractor of the project.

I certify under penalty of law that this document and all attachments will be revised or maintained under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

\_\_\_\_\_  
Authorized Signature

❖ **CONTACT INFORMATION**

➤ **Contractor Information:**

- Prime Contractor Name:
- Contractor Contact Name:
- Address:
- City: State: Zip:
- Office Phone: Field: Fax:
- Cell Phone: Fax:

➤ **Erosion Control Supervisor**

- Name:
- Address:
- City: State: Zip:
- Office Phone: Field: Fax:
- Cell Phone: Fax:

➤ **SDDOT Project Engineer**

- Name:
- Business Address:
- Job Office Location:
- City: State: Zip:
- Office Phone: Field: Fax:
- Cell Phone: Fax:

➤ **SD DENR Contact Spill Reporting**

- Business Hours Monday-Friday (605) 773-3296
- Nights and Weekends (605) 773-3231

➤ **SD DENR Contact for Hazardous Materials.**

- (605) 773-3153

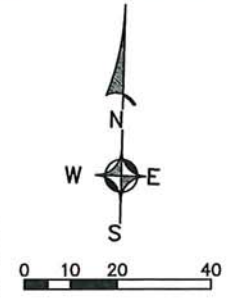
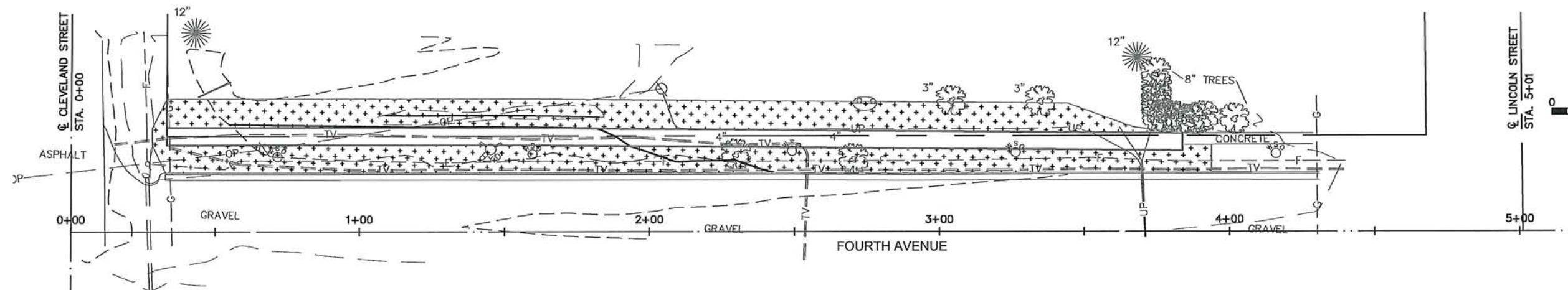
➤ **National Response Center Hotline**








**QUANTITIES**

59 LB - PERMANENT SEED MIXTURE  
 23 LB - FERTILIZER  
 301 LB - FIBER MULCHING



**LEGEND**

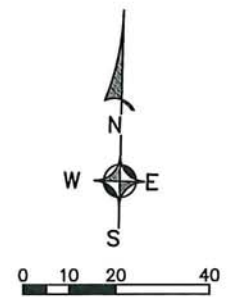
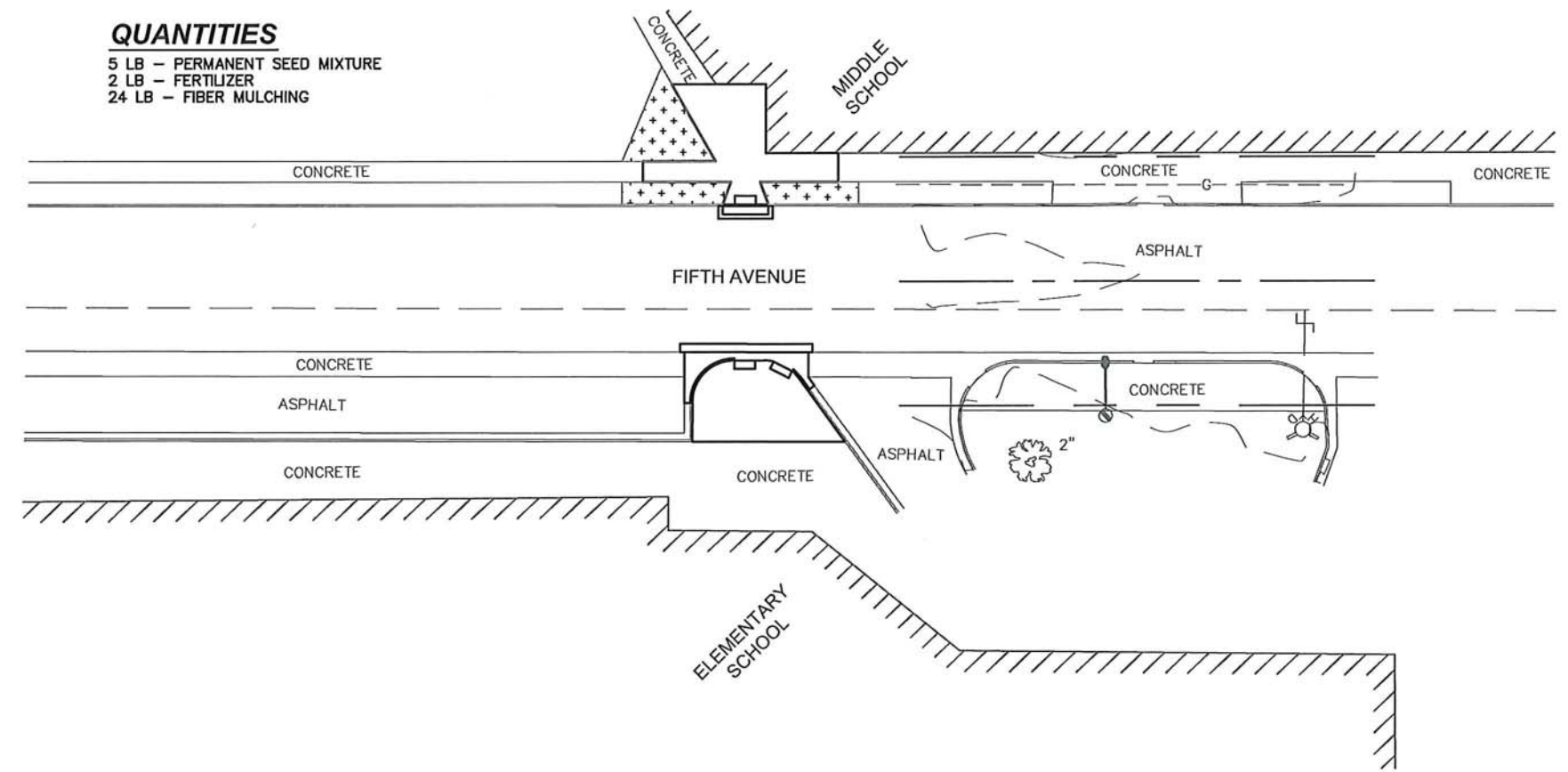
-  - CONCRETE WASHOUT AREA
-  - INLET SEDIMENT PROTECTION
-  - SEED, FERTILIZE AND FIBER MULCH

**BENCHMARK**

TOP NUT OF HYDRANT ±145' EAST OF CLEVELAND STREET ON THE NORTH SIDE OF 4TH AVENUE - ELEV. 1337.77

**QUANTITIES**

5 LB - PERMANENT SEED MIXTURE  
 2 LB - FERTILIZER  
 24 LB - FIBER MULCHING



**SAFE ROUTES TO SCHOOL**  
 FOURTH AVENUE & FIFTH AVENUE  
 LENNOX, SD

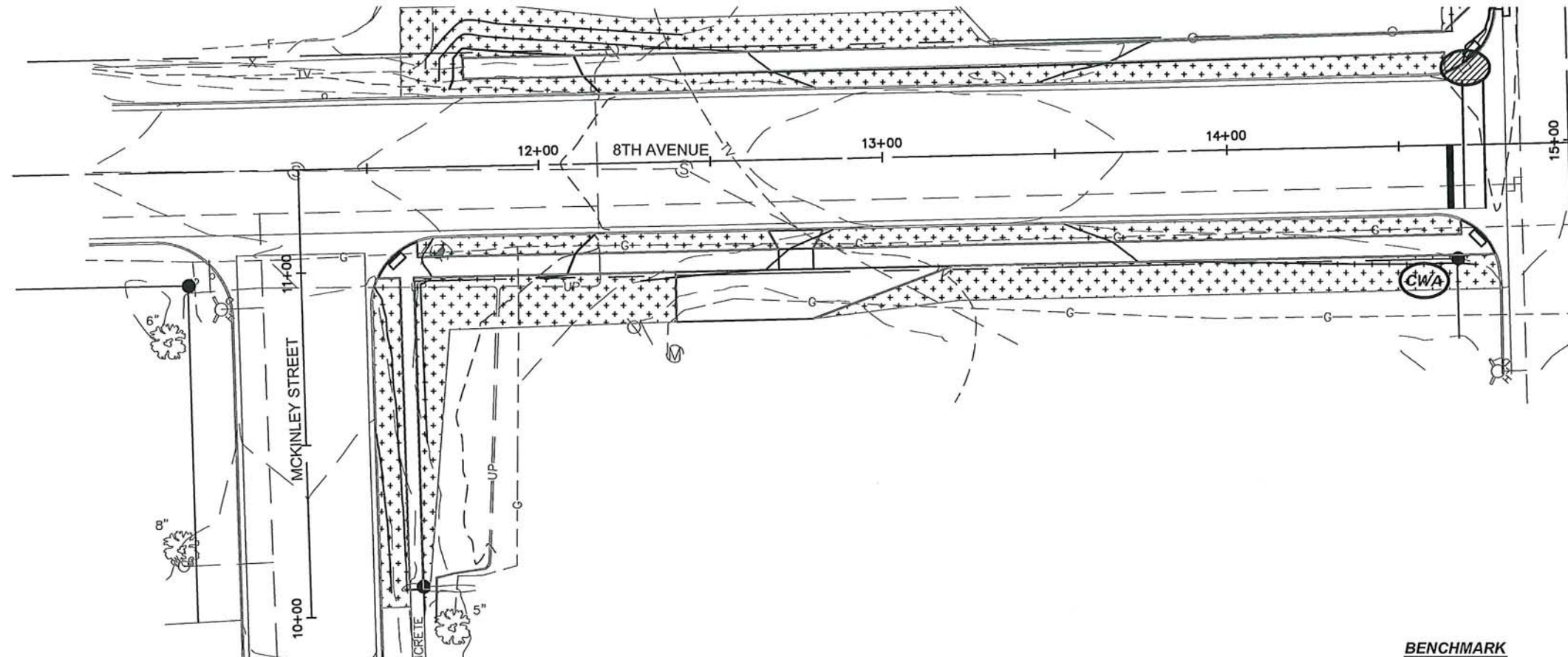
EROSION CONTROL/GRADING PLAN  
 DESIGNED BY: JDF  
 CHECKED BY: MAM  
 DATE: 1/22/14  
 BY: JDF  
 DATE: 1/22/14

**STOCKWELL ENGINEERS**  
 SIOUX FALLS, SD

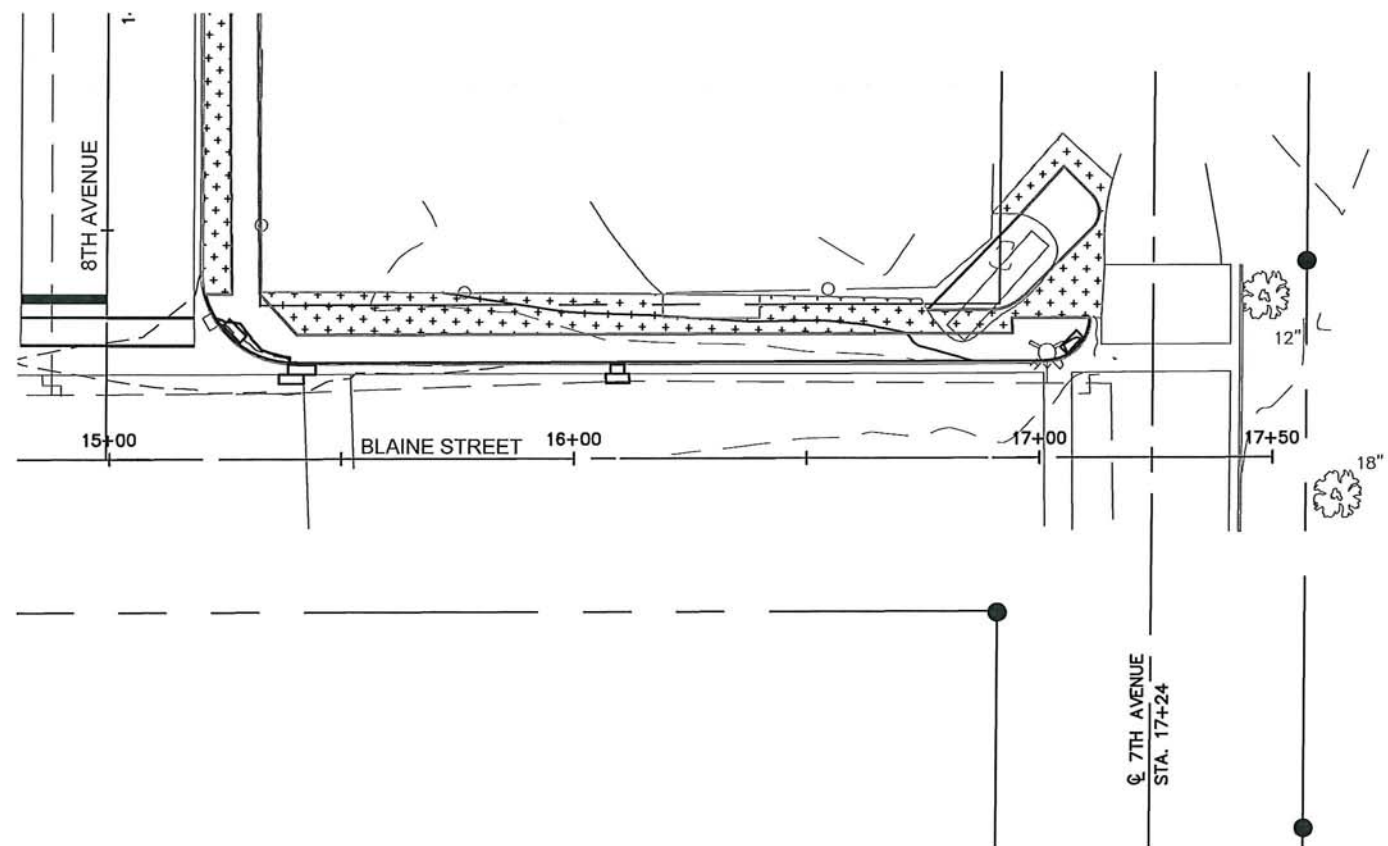
SHEET NO.  
**D-4**

**QUANTITIES**

- 1 EA - CONCRETE WASHOUT AREA
- 1 EA - INLET SEDIMENT PROTECTION
- 86 LB - PERMANENT SEED MIXTURE
- 33 LB - FERTILIZER
- 441 LB - FIBER MULCHING



**BENCHMARK**  
TOP NUT OF HYDRANT IN SOUTHWEST CORNER OF  
MCKINLEY STREET & 8TH AVENUE - ELEV. 1330.14



**QUANTITIES**

- 14 LB - PERMANENT SEED MIXTURE
- 5 LB - FERTILIZER
- 72 LB - FIBER MULCHING

**BENCHMARK**  
TOP NUT OF HYDRANT IN SOUTHWEST CORNER OF  
7TH AVENUE & BLAINE STREET - ELEV. 1333.95



**SAFE ROUTES TO SCHOOL**  
MCKINLEY STREET, 8TH STREET & BLAINE STREET  
LENNOX, SD

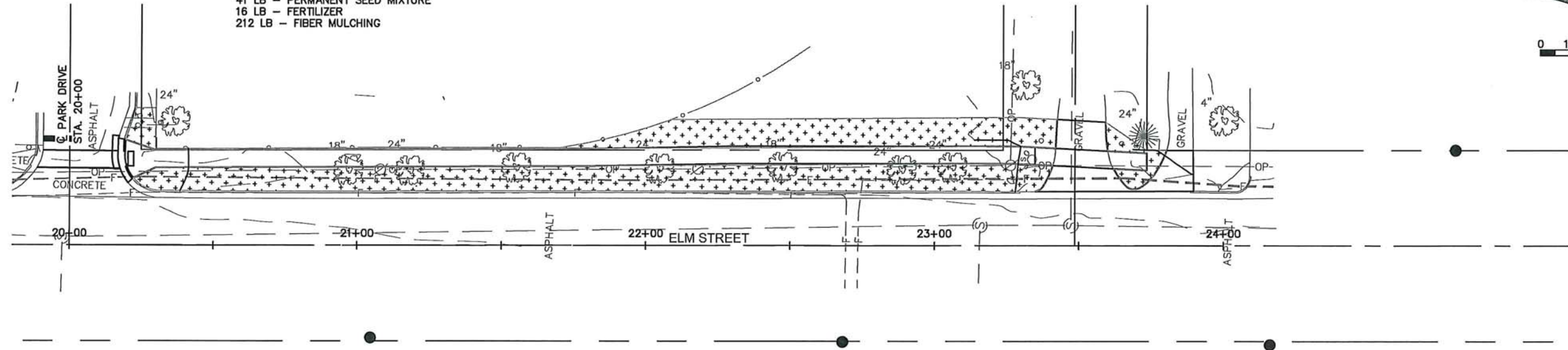
EROSION CONTROL/GRADING PLAN  
DESIGNED BY: JDF  
DRAWN BY: PK  
CHECKED BY: MMH  
REVISIONS:  
ACAD FILE: 3417 - Erosion\_Control.dwg  
DATE: 1/22/14  
BY: DATE

**STOCKWELL ENGINEERS**  
SIOUX FALLS, SD

SHEET NO.  
**D-5**

**QUANTITIES**

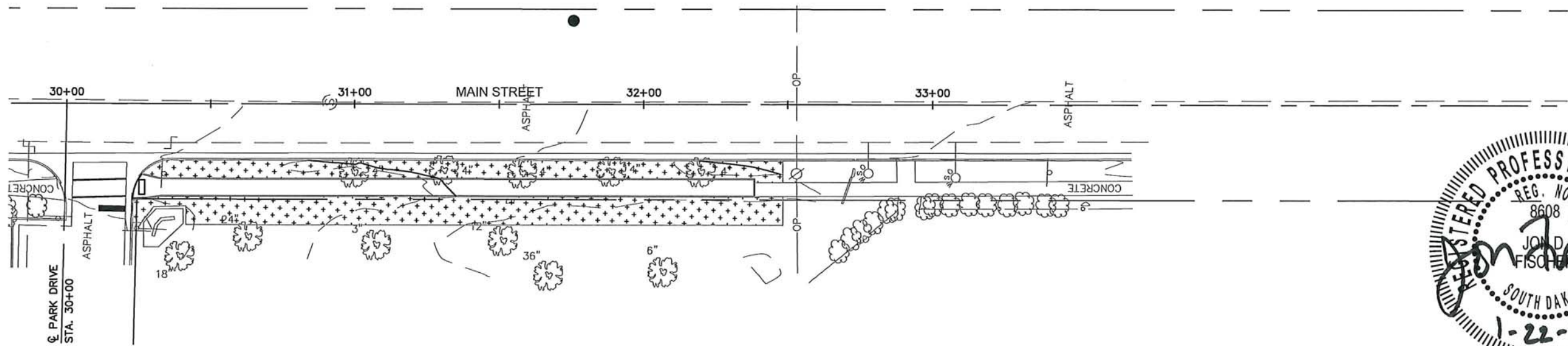
41 LB - PERMANENT SEED MIXTURE  
 16 LB - FERTILIZER  
 212 LB - FIBER MULCHING



**BENCHMARK**  
 TOP NUT OF HYDRANT IN SOUTHWEST CORNER OF  
 ELM STREET & 9TH AVENUE - ELEV. 1336.26

**QUANTITIES**

32 LB - PERMANENT SEED MIXTURE  
 12 LB - FERTILIZER  
 164 LB - FIBER MULCHING



**BENCHMARK**  
 TOP NUT OF HYDRANT IN NORTHWEST CORNER OF  
 MAIN STREET & PARK DRIVE - ELEV. 1341.60



SAFE ROUTES TO SCHOOL  
 ELM STREET & MAIN STREET  
 LENNOX, SD

EROSION CONTROL/GRADING PLAN  
 DESIGNED BY: JDF  
 DRAWN BY: JDF  
 CHECKED BY: MMW  
 REVISIONS:  
 ACAD. FILE: 3417 - Erosion\_Control.dwg  
 DATE: 1/22/14  
 BY: DATE  
 BY: DATE

STOCKWELL ENGINEERS  
 SIOUX FALLS, SD

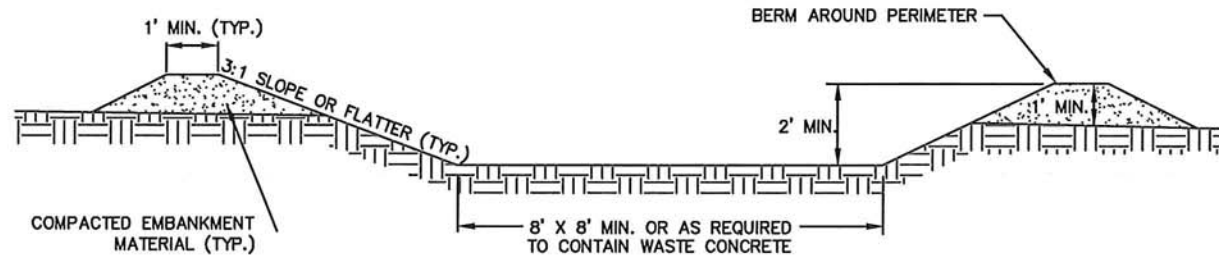
SHEET NO.  
 D-6

CONCRETE WASHOUT FACILITY

CWF

NOTES:

1. CONCRETE WASHOUT FACILITY SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON SITE.
2. A SIGN SHALL BE INSTALLED ADJACENT TO EACH WASHOUT FACILITY TO INFORM CONCRETE EQUIPMENT OPERATORS TO UTILIZE THE CWF.
3. THE CONCRETE WASHOUT FACILITY SHALL BE REPAIRED AND ENLARGED OR CLEANED OUT AS NECESSARY TO MAINTAIN CAPACITY FOR WASTED CONCRETE.
4. WHEN CWF ARE NO LONGER REQUIRED FOR THE WORK, THE HARDENED CONCRETE AND MATERIALS USED TO CONSTRUCT THE CWF SHALL BE REMOVED AND DISPOSED OF.
5. WHEN THE CONCRETE WASHOUT FACILITY IS REMOVED, THE HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCE SHALL BE BACKFILLED, REPAIRED AND STABILIZED.

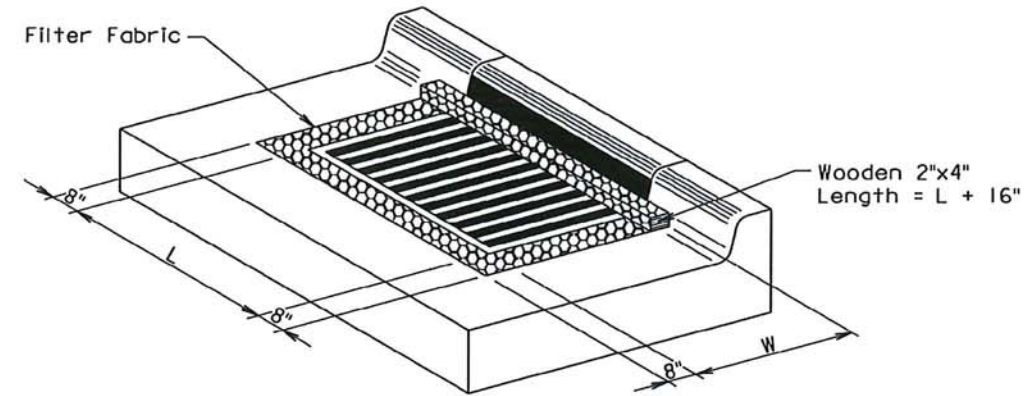


CROSS SECTIONAL VIEW



CONCRETE WASHOUT FACILITY

L = Length of Grate  
W = Width of Grate



ISOMETRIC VIEW

GENERAL NOTES:

The grate and curb and gutter shown are for illustrative purposes only.

The sediment control at inlet with frame and grate shall be placed at locations stated in the plans or at locations determined by the Engineer.

The filter fabric shall be the type specified in the plans.

The filter fabric shall be placed in the inlet opening prior to placing the grate. Approximately 18 inches of excess filter fabric shall be wrapped around the 2"x4" and stapled securely to the 2"x4" after the grate has been placed.

The Contractor shall inspect and maintain the sediment control device once every week and within 24 hours after every rainfall event. The Contractor shall maintain the sediment control device by removing accumulated sediment and replacing torn filter fabric with new filter fabric.

The removed sediment shall be placed at a location away from the drop inlet where the sediment will not be washed back into the drop inlet or other storm sewer system.

All costs for furnishing, installing, inspecting, maintaining, removing, and replacing the sediment control device at the inlet including labor, equipment, and materials shall be incidental to the contract unit price per each for "Sediment Control at Inlet with Frame and Grate".

September 14, 2005

Published Date: 1st Qtr. 2013

S  
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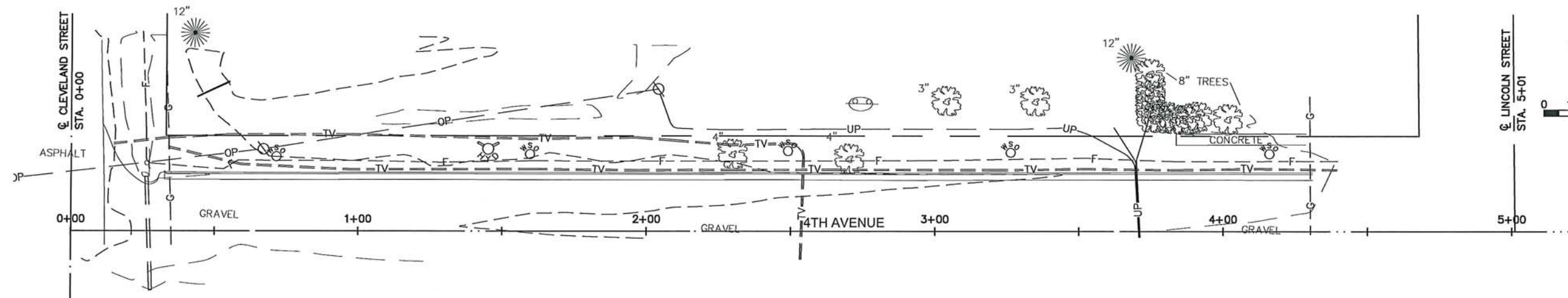
SEDIMENT CONTROL AT INLETS  
WITH FRAMES AND GRATES

PLATE NUMBER  
734.10





Sheet 1 of 1



**QUANTITIES**  
NO REMOVALS THIS SHEET



**LEGEND**

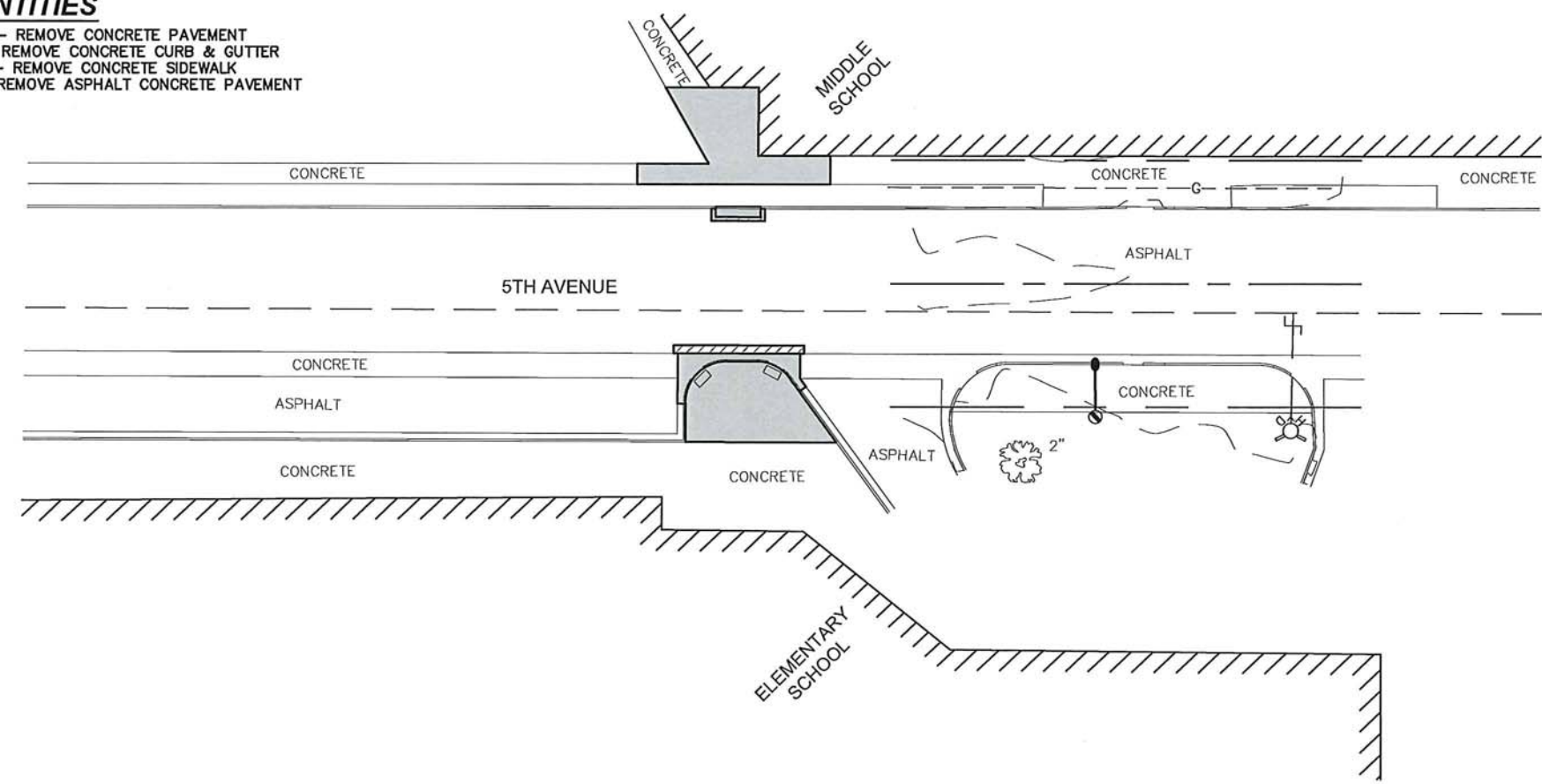
-  - REMOVAL OF CONCRETE CURB & GUTTER
-  - REMOVAL OF CONCRETE PAVEMENT
-  - REMOVAL OF ASPHALT CONCRETE PAVEMENT
-  - CLEAR & GRUB TREE, STUMP, AND/OR BUSH

**BENCHMARK**

TOP NUT OF HYDRANT ±145' EAST OF CLEVELAND STREET ON THE NORTH SIDE OF 4TH AVENUE - ELEV. 1337.77

**QUANTITIES**

- 12.1 SY - REMOVE CONCRETE PAVEMENT
- 21 LF - REMOVE CONCRETE CURB & GUTTER
- 127 SY - REMOVE CONCRETE SIDEWALK
- 9 SY - REMOVE ASPHALT CONCRETE PAVEMENT



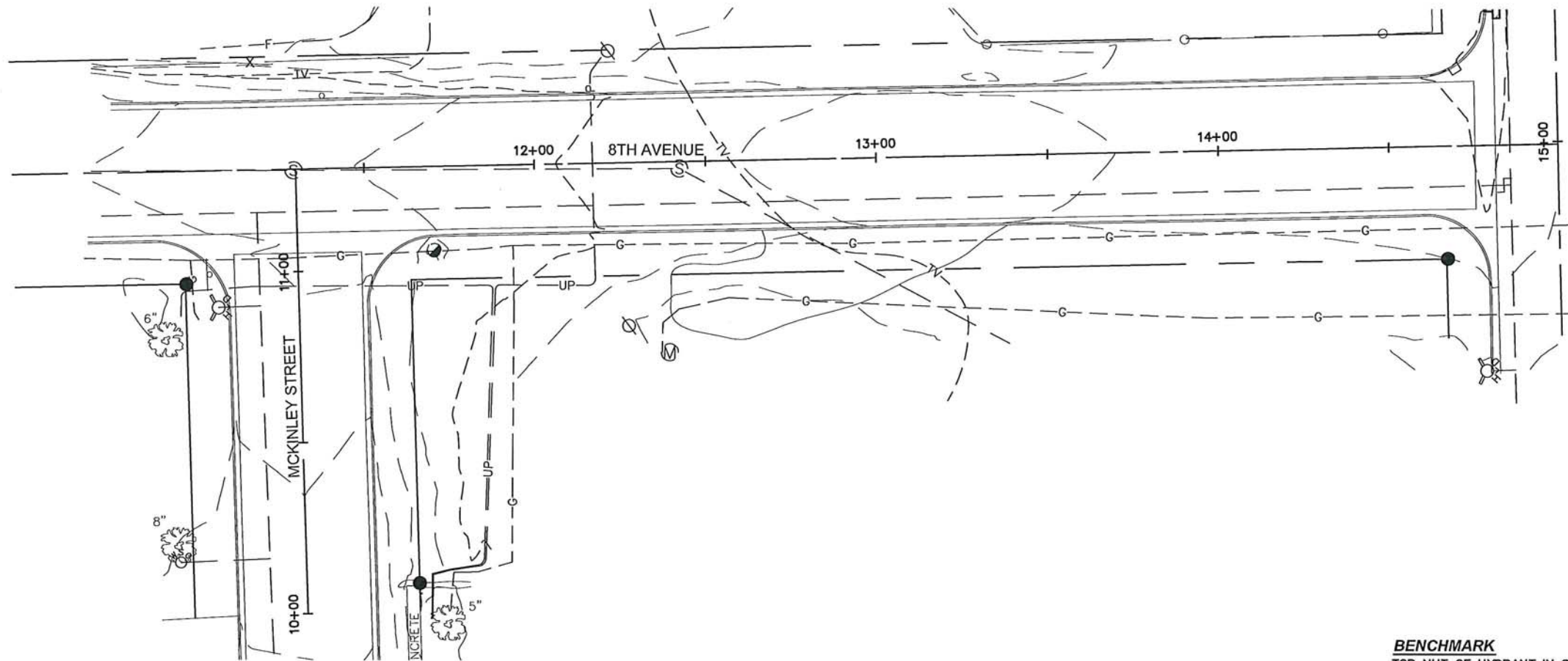
SAFE ROUTES TO SCHOOL  
4TH STREET  
LENNOX, SD

EXISTING CONDITIONS/REMOVALS  
DESIGNED BY: JDF  
DRAWN BY: MCM  
CHECKED BY: MMH  
REVISIONS:  
DATE: 1/22/14  
BY: JDF  
DATE:

STOCKWELL ENGINEERS  
SIOUX FALLS, SD

**QUANTITIES**

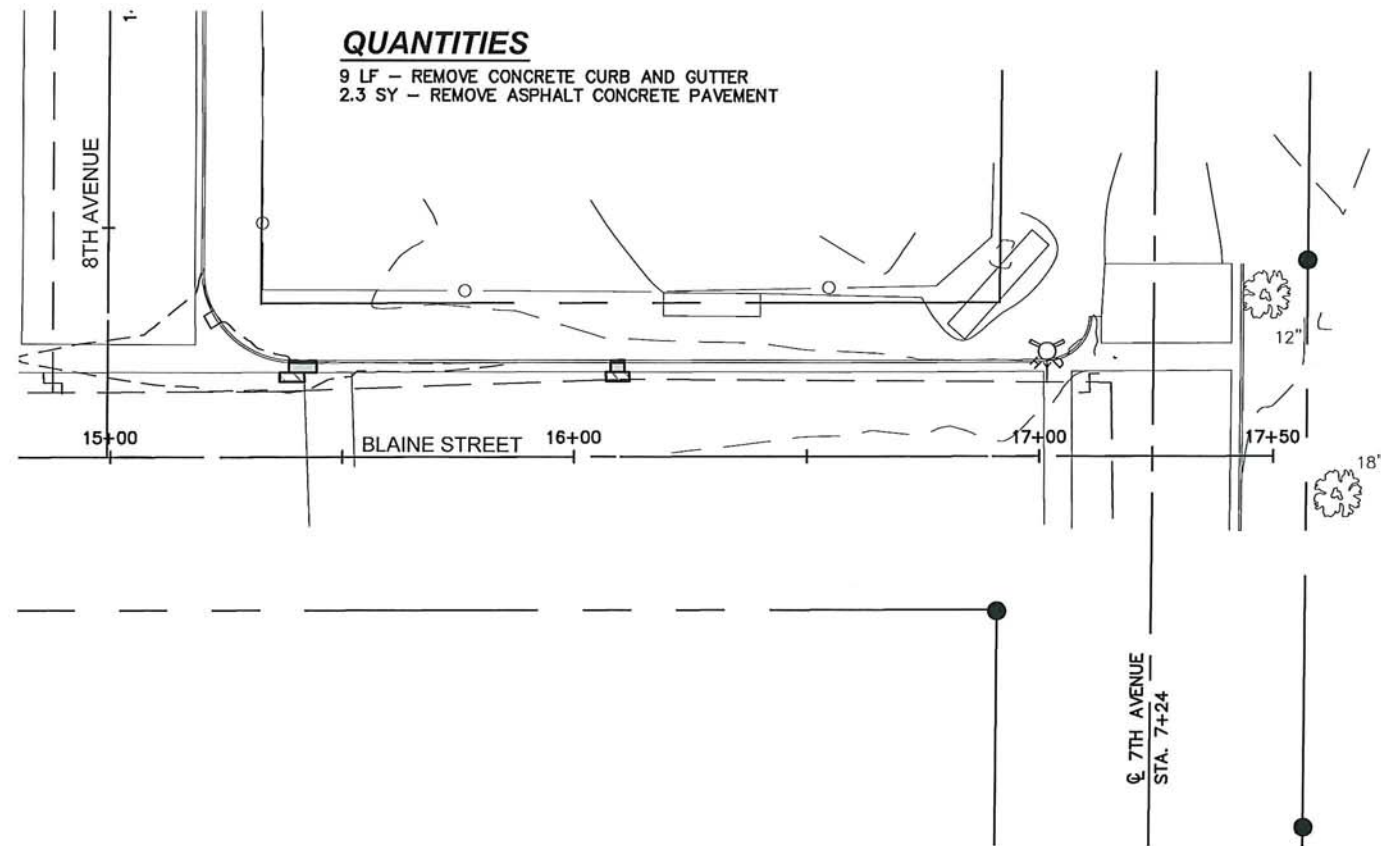
NO REMOVALS STA 10+00 TO STA 15+00



**BENCHMARK**  
TOP NUT OF HYDRANT IN SOUTHWEST CORNER OF  
MCKINLEY STREET & 8TH AVENUE - ELEV. 1330.14

**QUANTITIES**

9 LF - REMOVE CONCRETE CURB AND GUTTER  
2.3 SY - REMOVE ASPHALT CONCRETE PAVEMENT



**BENCHMARK**  
TOP NUT OF HYDRANT IN SOUTHWEST CORNER OF  
7TH AVENUE & BLAINE STREET - ELEV. 1333.95



EXISTING CONDITIONS/REMOVALS

DESIGNED BY: JCF	ACAD FILE: 5417 - Removals
DRAWN BY: JCF	DATE: 1/22/14
CHECKED BY: JCF	DATE: 1/22/14
REVISIONS:	BY: DATE:

**STOCKWELL ENGINEERS**  
SIOUX FALLS, SD

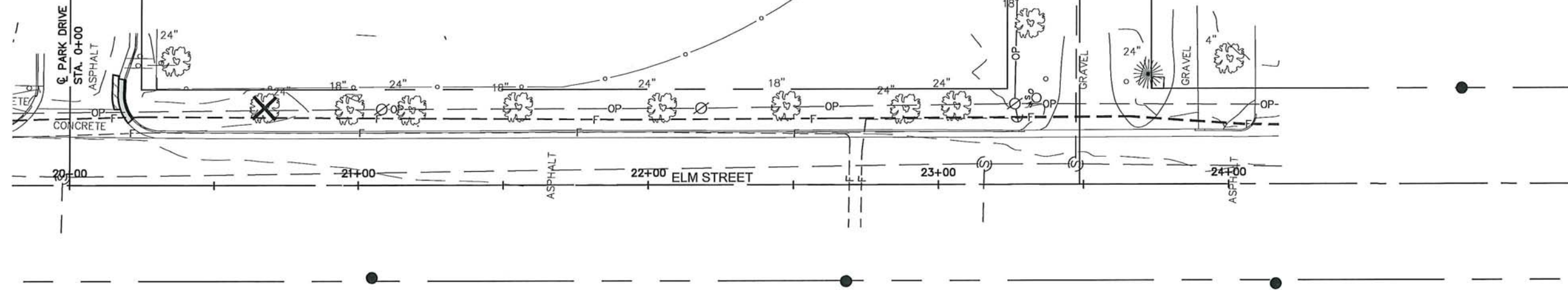
**SAFE ROUTES TO SCHOOL**  
MCKINLEY STREET, 8TH STREET & BLAINE STREET  
LENNOX, SD

SHEET NO.

**E-2**

**QUANTITIES**

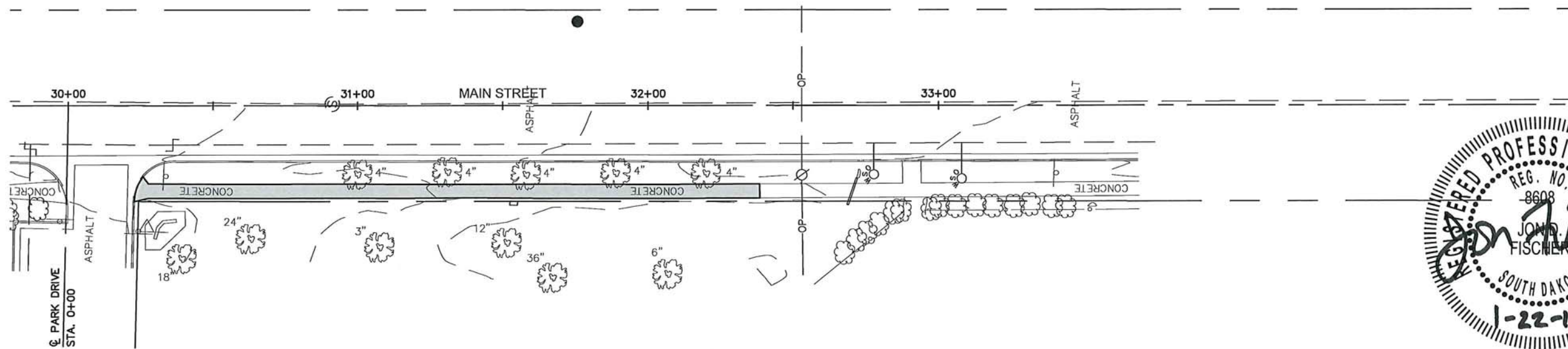
- 1 EA - CLEAR AND GRUB TREE
- 15 LF - REMOVE CONCRETE CURB AND GUTTER
- 2.6 SY - REMOVE ASPHALT CONCRETE PAVEMENT



**BENCHMARK**  
TOP NUT OF HYDRANT IN SOUTHWEST CORNER OF  
ELM STREET & 9TH AVENUE - ELEV. 1336.26

**QUANTITIES**

- 117 SY - REMOVE CONCRETE SIDEWALK



**BENCHMARK**  
TOP NUT OF HYDRANT IN NORTHWEST CORNER OF  
MAIN STREET & PARK DRIVE - ELEV. 1341.60

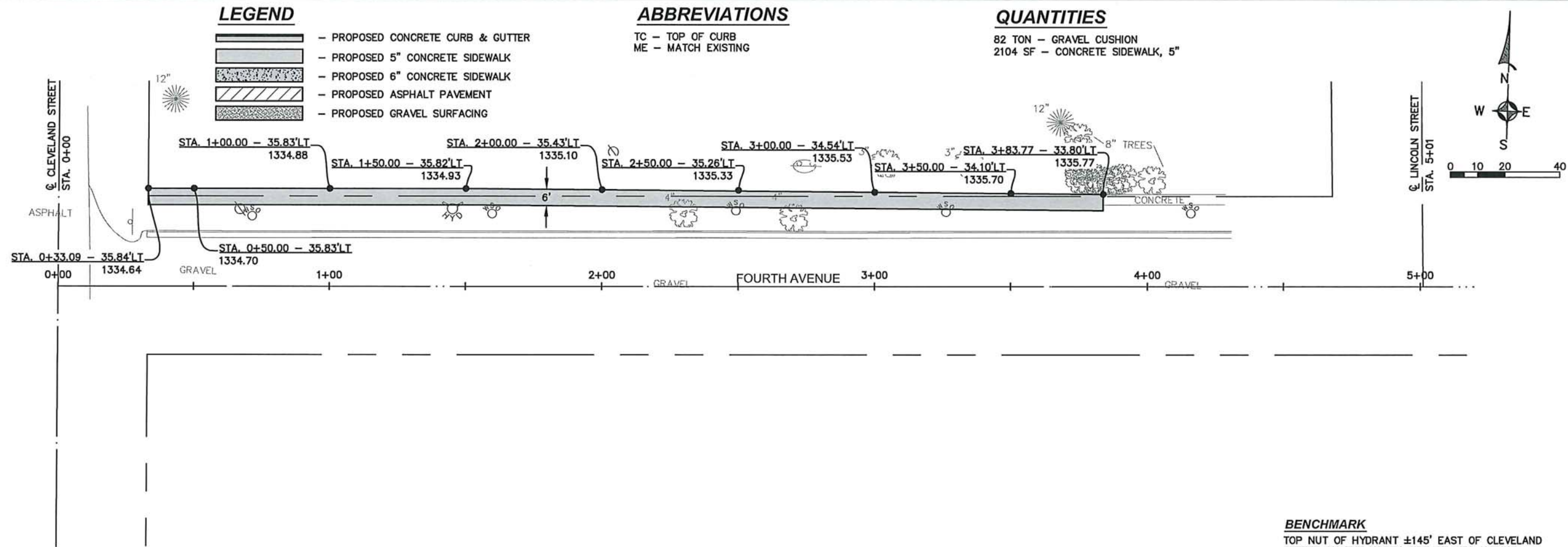


**SAFE ROUTES TO SCHOOL**  
ELM STREET & MAIN STREET  
LENNOX, SD

EXISTING CONDITIONS/REMOVALS  
DESIGNED BY: JF  
CHECKED BY: JF  
DATE: 1/22/14  
BY: JF  
DATE: 1/22/14

**STOCKWELL ENGINEERS**  
SIOUX FALLS, SD

SHEET NO.  
**E-3**

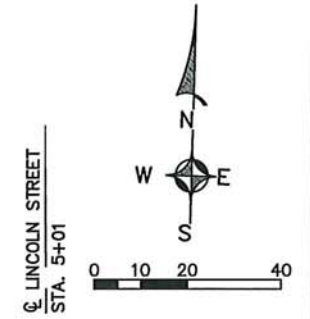


**LEGEND**

- PROPOSED CONCRETE CURB & GUTTER
- PROPOSED 5\"/>

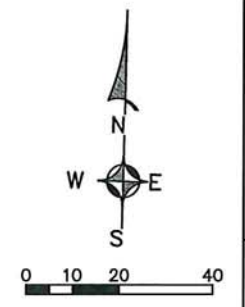
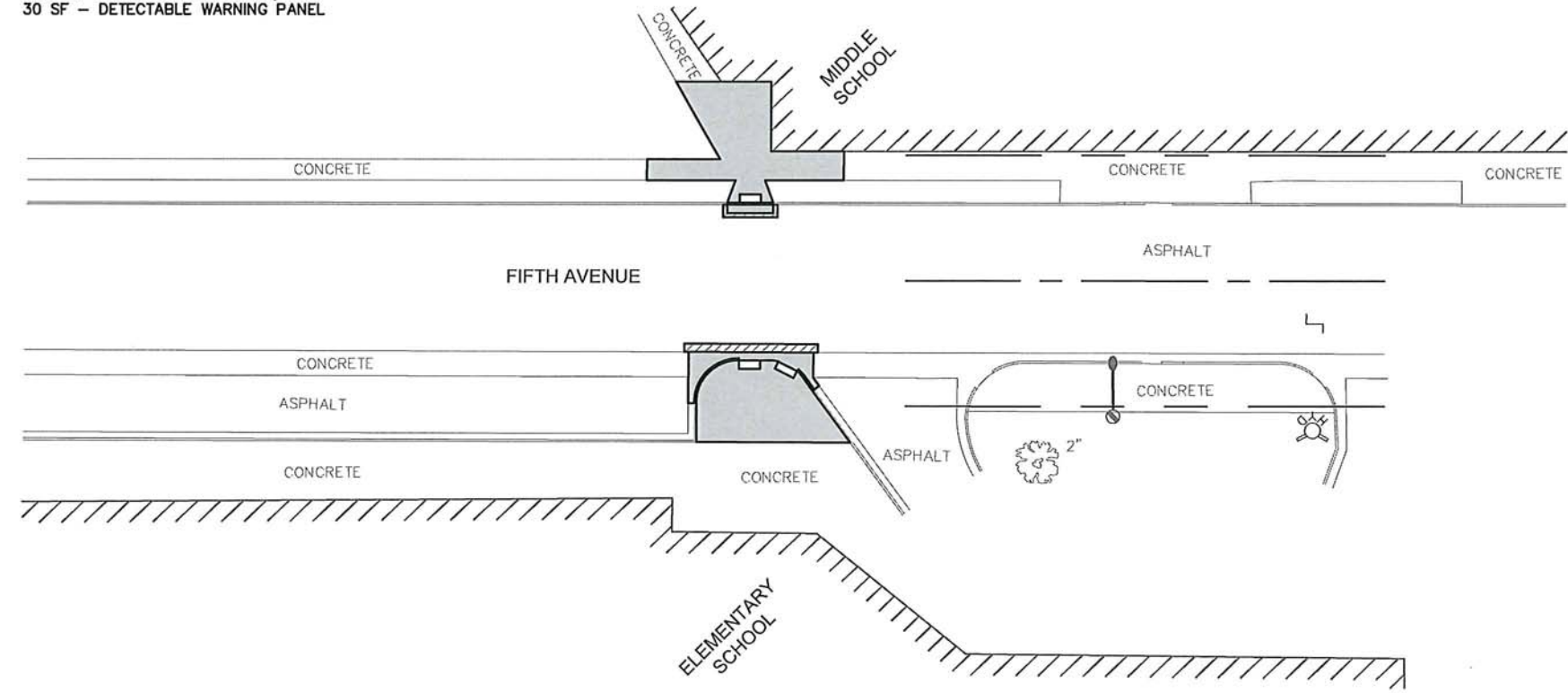
**ABBREVIATIONS**  
 TC - TOP OF CURB  
 ME - MATCH EXISTING

**QUANTITIES**  
 82 TON - GRAVEL CUSHION  
 2104 SF - CONCRETE SIDEWALK, 5\"/>



**BENCHMARK**  
 TOP NUT OF HYDRANT ±145' EAST OF CLEVELAND STREET ON THE NORTH SIDE OF 4TH AVENUE - ELEV. 1337.77

**QUANTITIES**  
 82 TON - GRAVEL CUSHION  
 3 TON - ASPHALT CONCRETE COMPOSITE FOR PATCHING  
 21 LF - CONCRETE CURB & GUTTER  
 12.1 SY - CONCRETE FILLET SECTION, 6\"/>



**SAFE ROUTES TO SCHOOL**  
 FOURTH AVENUE AND FIFTH AVENUE  
 LENNOX, SD

DESIGNED BY: JDF  
 DRAWN BY: PK  
 CHECKED BY: MMH  
 REVISIONS:  
 DATE: 1/22/14  
 BY: DATE

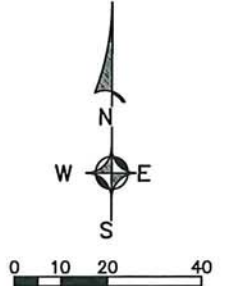
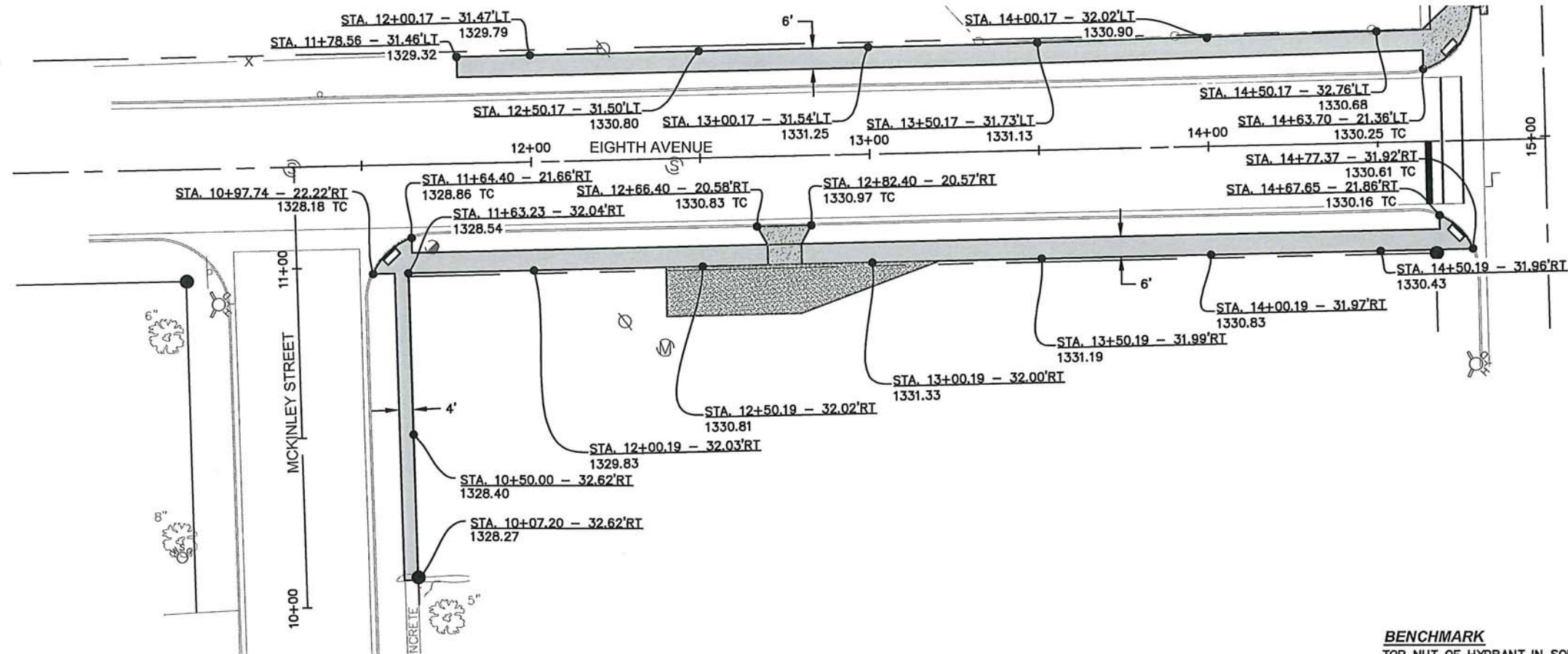
**STOCKWELL ENGINEERS**  
 SIOUX FALLS, SD

SHEET NO.  
**F-1**

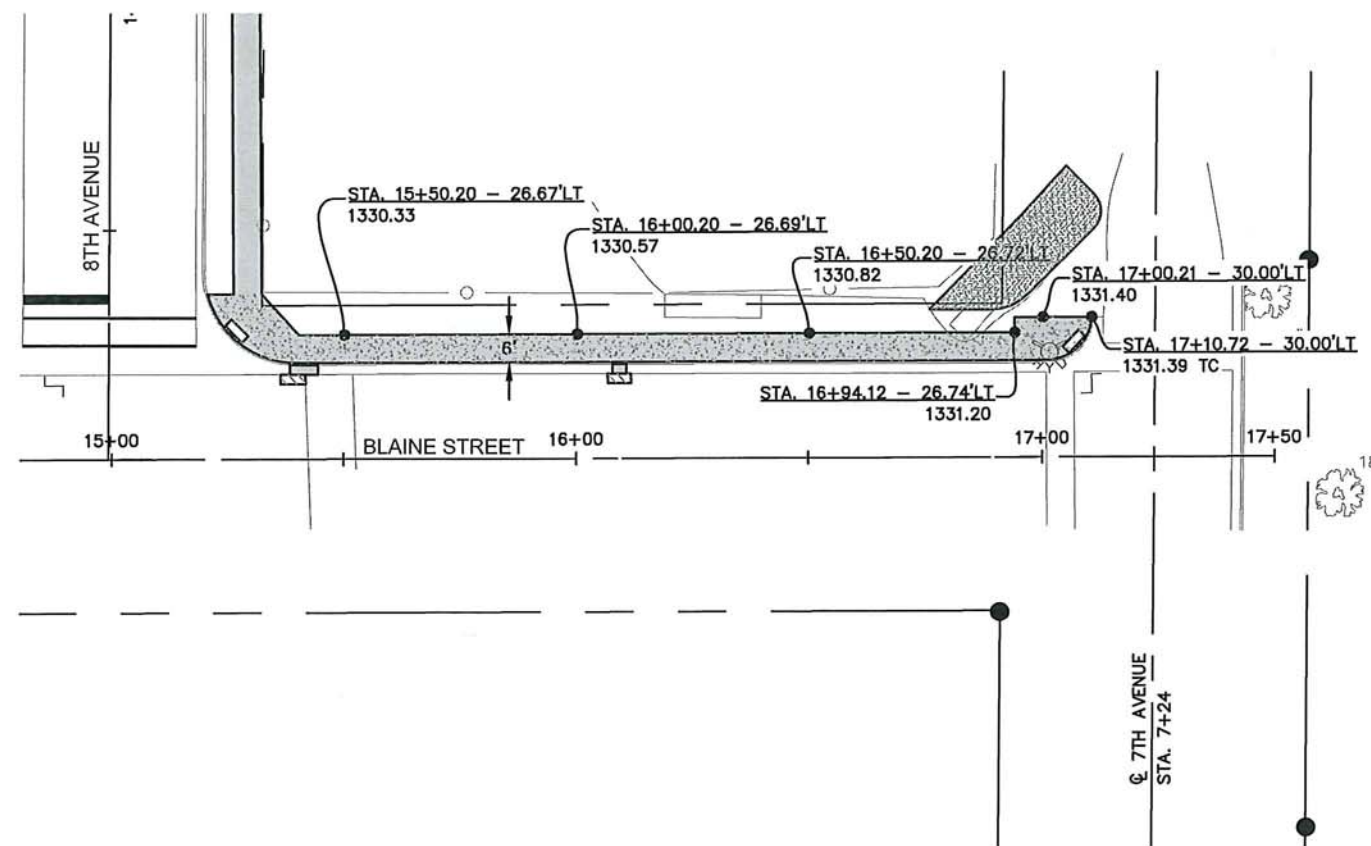


**QUANTITIES**

- 38 TON - GRAVEL SURFACING
- 157 TON - GRAVEL CUSHION
- 7.9 SY - CONCRETE APPROACH PAVEMENT, 6"
- 3970 SF - CONCRETE SIDEWALK, 5"
- 60 SF - CONCRETE SIDEWALK, 6"
- 20 SF - DETECTABLE WARNING PANEL

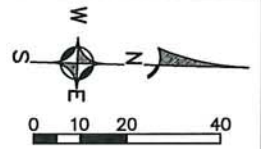


**BENCHMARK**  
TOP NUT OF HYDRANT IN SOUTHWEST CORNER OF  
MCKINLEY STREET & 8TH AVENUE - ELEV. 1330.14



**QUANTITIES**

- 20 TON - GRAVEL SURFACING
- 48 TON - GRAVEL CUSHION
- 1 TON - ASPHALT CONCRETE COMPOSITE FOR PATCHING
- 9 LF - CONCRETE CURB & GUTTER
- 1241 SF - CONCRETE SIDEWALK, 6"
- 20 SF - DETECTABLE WARNING PANEL



**BENCHMARK**  
TOP NUT OF HYDRANT IN SOUTHWEST CORNER OF  
7TH AVENUE & BLAINE STREET - ELEV. 1333.95



**SAFE ROUTES TO SCHOOL**  
MCKINLEY STREET, EIGHTH STREET & BLAINE STREET  
LENNOX, SD

PAVEMENT PLAN

DESIGNED BY: JDF	ACAD. ELEV: 13312	PROJECT: Pavement.dwg
DRAWN BY: PK	CHECKED BY: JMM	DATE: 1/22/14
BY:	DATE:	REVISIONS:

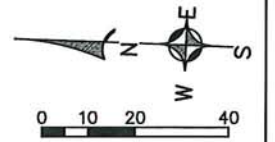
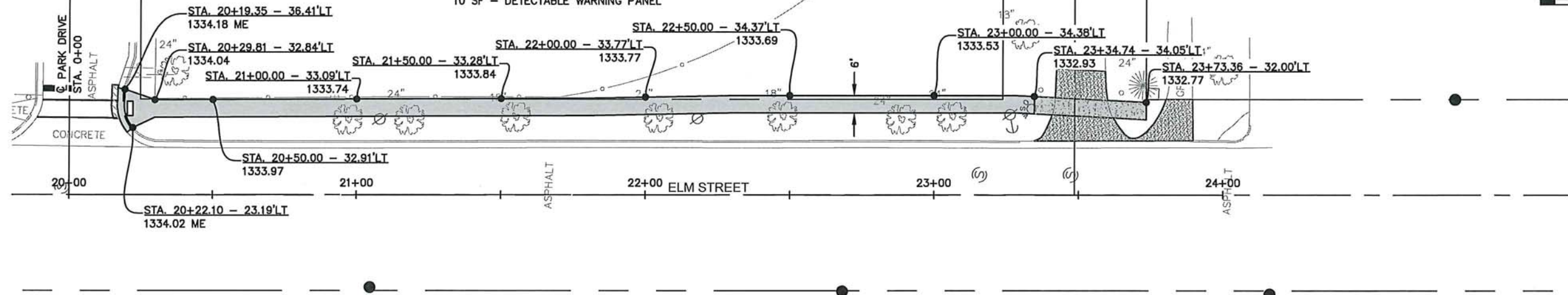
**STOCKWELL ENGINEERS**  
SIOUX FALLS, SD

SHEET NO.

F-2

**QUANTITIES**

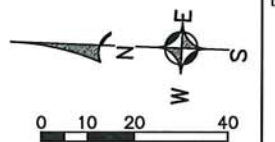
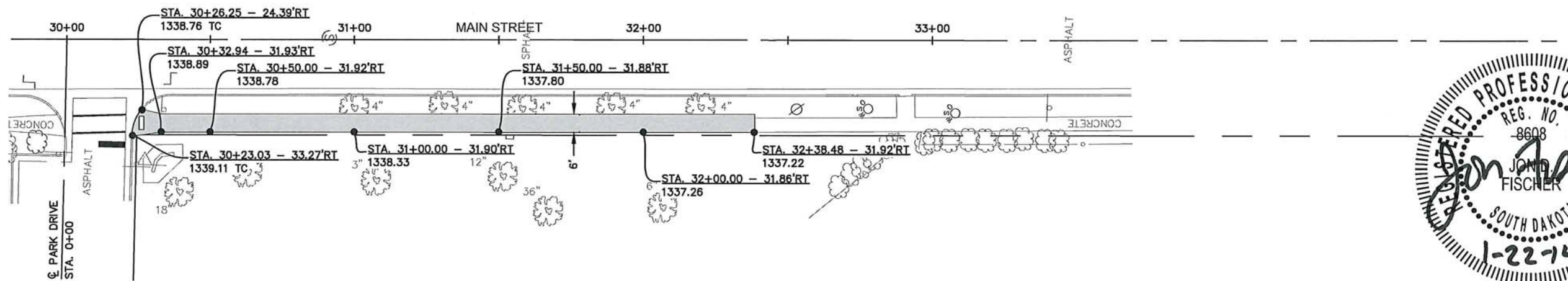
- 25 TON - GRAVEL SURFACING
- 86 TON - GRAVEL CUSHION
- 1 TON - ASPHALT CONCRETE COMPOSITE FOR PATCHING
- 15 LF - CONCRETE CURB & GUTTER
- 1968 SF - CONCRETE SIDEWALK, 5"
- 232 SF - CONCRETE SIDEWALK, 6"
- 10 SF - DETECTABLE WARNING PANEL



**BENCHMARK**  
TOP NUT OF HYDRANT IN SOUTHWEST CORNER OF  
ELM STREET & 9TH AVENUE - ELEV. 1336.26

**QUANTITIES**

- 51 TON - GRAVEL CUSHION
- 1300 SF - CONCRETE SIDEWALK, 5"
- 10 SF - DETECTABLE WARNING PANEL



**BENCHMARK**  
TOP NUT OF HYDRANT IN NORTHWEST CORNER OF  
MAIN STREET & PARK DRIVE - ELEV. 1341.60

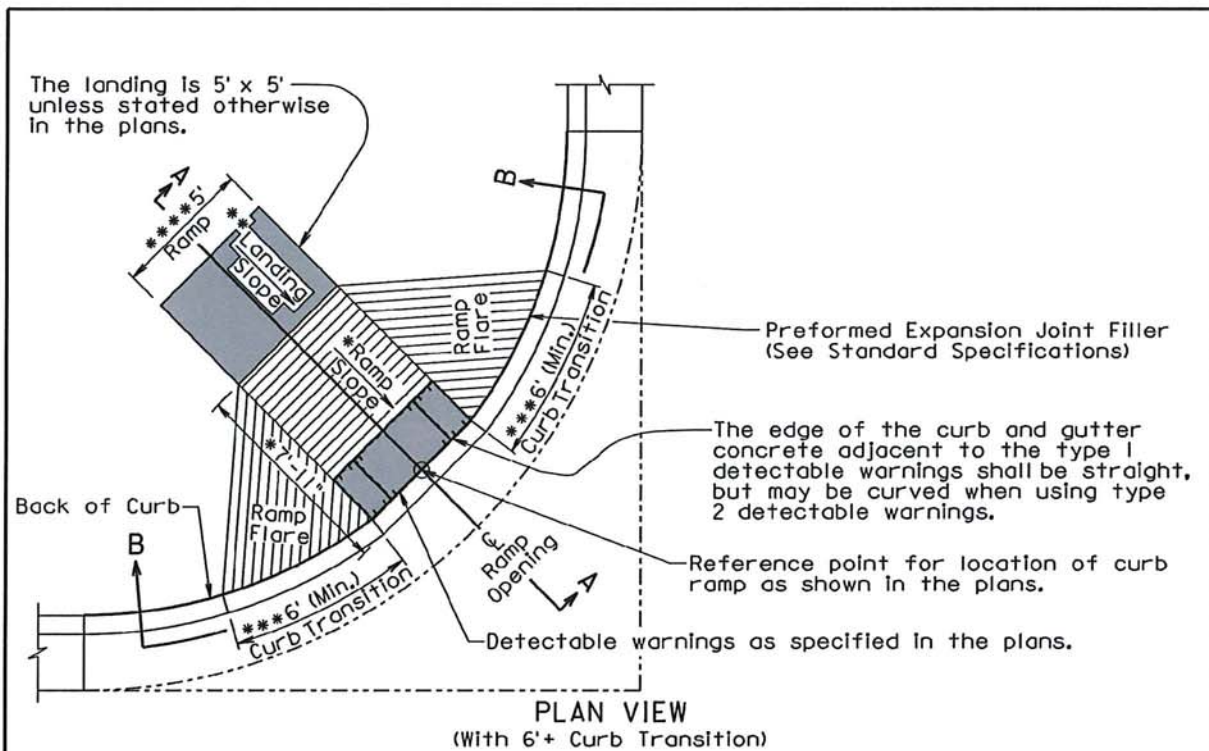


SAFE ROUTES TO SCHOOL  
ELM STREET & MAIN STREET  
LENNOX, SD

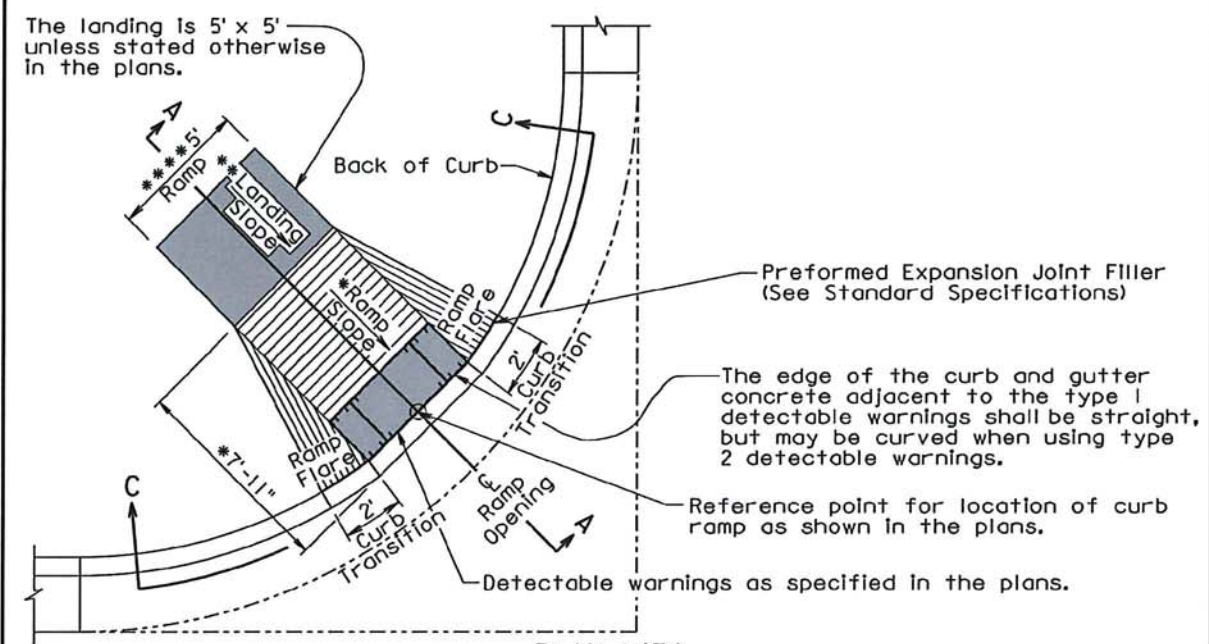
PAVEMENT PLAN  
DESIGNED BY: JF  
DRAWN BY: JF  
CHECKED BY: JF  
REVISIONS:  
DATE: 1/22/14  
BY: JF  
DATE:

STOCKWELL ENGINEERS  
SIOUX FALLS, SD

SHEET NO.  
F-3



PLAN VIEW  
(With 6'+ Curb Transition)



PLAN VIEW  
(With 2' Curb Transition)

September 14, 2009

<b>SDOT</b>	<b>TYPE 1 CURB RAMP (PERPENDICULAR CURB RAMP)</b>	PLATE NUMBER <b>651.01</b>
	Published Date: 3rd Qtr. 2012	Sheet 1 of 3

The ramp slope shall be 12:1 (8.3%) maximum. The ramp length shall not exceed 15' unless stated otherwise in the plans. Ramp slopes are designed at 12:1 (8.3%) unless stated otherwise in the plans.

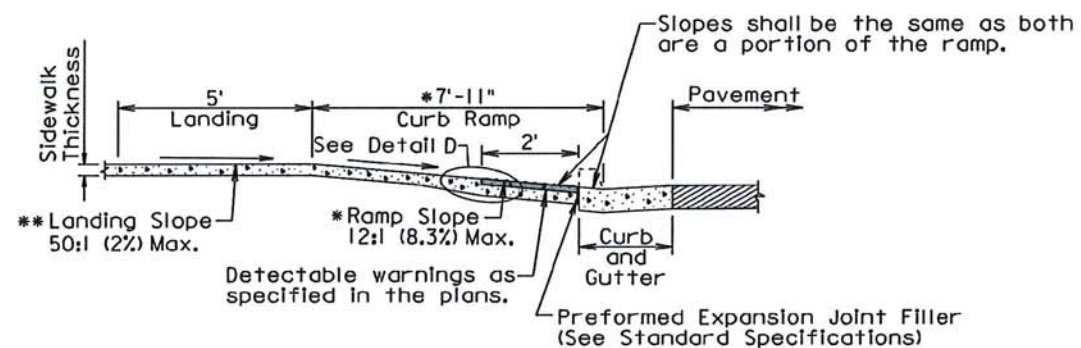
\* The cross slope of the ramp shall not be steeper than 50:1 (2%).

The 7'-11" dimension was computed based on a flat roadway profile, a continuous 2% theoretical slope from top of theoretical curb to the top of ramp, and a 6" high curb. The dimension shall be adjusted based on the curb type shown in the plans, the roadway geometrics, and the sidewalk geometrics.

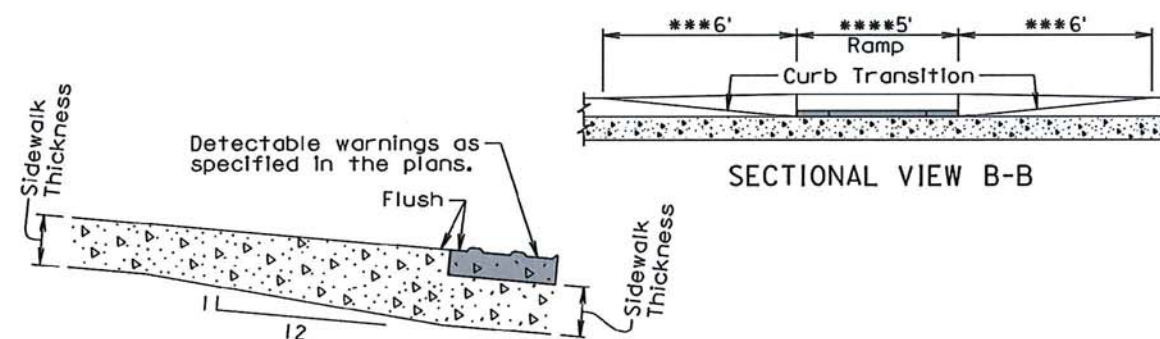
\*\* The landing slope shall not be steeper than 50:1 (2%) in any direction of pedestrian travel.

\*\*\* The curb transition shall be a minimum of 6' long, a maximum of 10' long, and the curb transition slope shall not be steeper than 10:1 (10%) unless stated otherwise in the plans.

\*\*\*\* The ramp width is 5' unless stated otherwise in the plans.



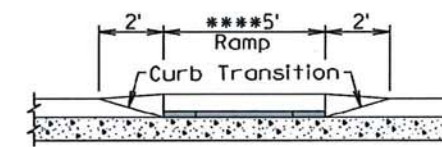
SECTION A-A



SECTIONAL VIEW B-B



DETAIL D



SECTIONAL VIEW C-C

September 14, 2009

<b>SDOT</b>	<b>TYPE 1 CURB RAMP (PERPENDICULAR CURB RAMP)</b>	PLATE NUMBER <b>651.01</b>
	Published Date: 3rd Qtr. 2012	Sheet 2 of 3

**GENERAL NOTES:**

For illustrative purpose only, type 1 detectable warnings are shown in the drawings.

For illustrative purpose only, PCC fillet sections are shown in the drawings. The curb ramp depicted on this standard plate may be used with a PCC fillet section, with curved curb and gutter, or with straight curb and gutter.

For illustrative purpose only, the curb ramp location is shown at the center of a PCC fillet section. The curb ramp shall be placed at the location stated in the plans.

Sidewalk shall not be placed adjacent to the ramp flares when a 2' curb transition is used unless shown otherwise in the plans.

\* Care shall be taken to ensure a uniform grade on the ramp, free of sags and short grade changes.

Surface texture of the ramp shall be obtained by coarse brooming transverse to the slope of the ramp.

The normal gutter line profile shall be maintained through the area of the ramp.

Joints shall be sawed or tooled into the concrete adjacent to the detectable warnings to alleviate possible corner cracking.

Care shall be taken to ensure that the surface of the detectable warnings are clean and maintains a uniform color.

There will be no separate payment for curb ramps. The curb ramp shall be measured and paid for at the contract unit price per square foot for the corresponding concrete sidewalk bid item. The square foot area of the detectable warnings shall be included in the measured and paid for quantity of sidewalk.

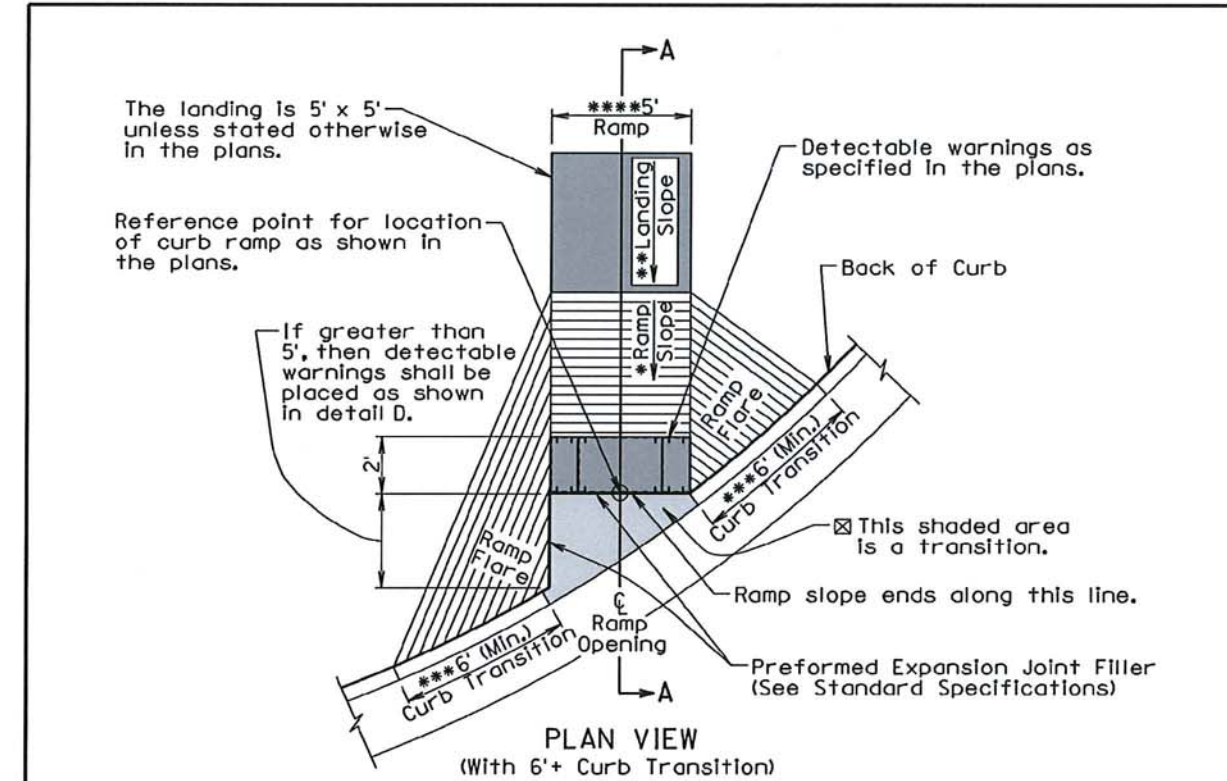
The curb transitions and ramp opening shall be measured and paid for at the contract unit price per foot for the corresponding curb and gutter bid item when curb and gutter is used. The curb transitions and ramp opening shall be measured and paid for at the contract unit price per square yard for the corresponding PCC fillet section bid item when a PCC fillet section is used.

The type 1 detectable warnings shall be measured to the nearest square foot. All costs for furnishing and installing the type 1 detectable warnings including labor, equipment, materials, and incidentals shall be paid for at the contract unit price per square foot for "Type 1 Detectable Warnings".

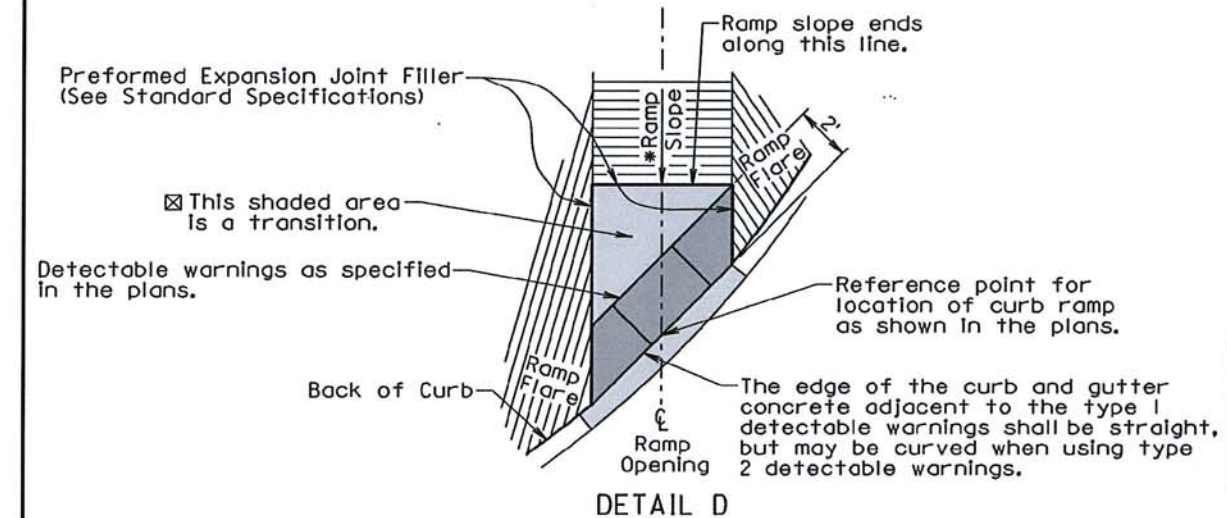
The type 2 detectable warnings shall be measured to the nearest square foot. All costs for furnishing and installing the type 2 detectable warnings including labor, equipment, and materials, including adhesive, necessary sealant or grout, and necessary grinding shall be paid for at the contract unit price per square foot for "Type 2 Detectable Warnings".

September 14, 2009

<b>S D D O T</b>	<b>TYPE 1 CURB RAMP (PERPENDICULAR CURB RAMP)</b>	PLATE NUMBER <b>651.01</b>
	Published Date: 3rd Qtr. 2012	Sheet 3 of 3

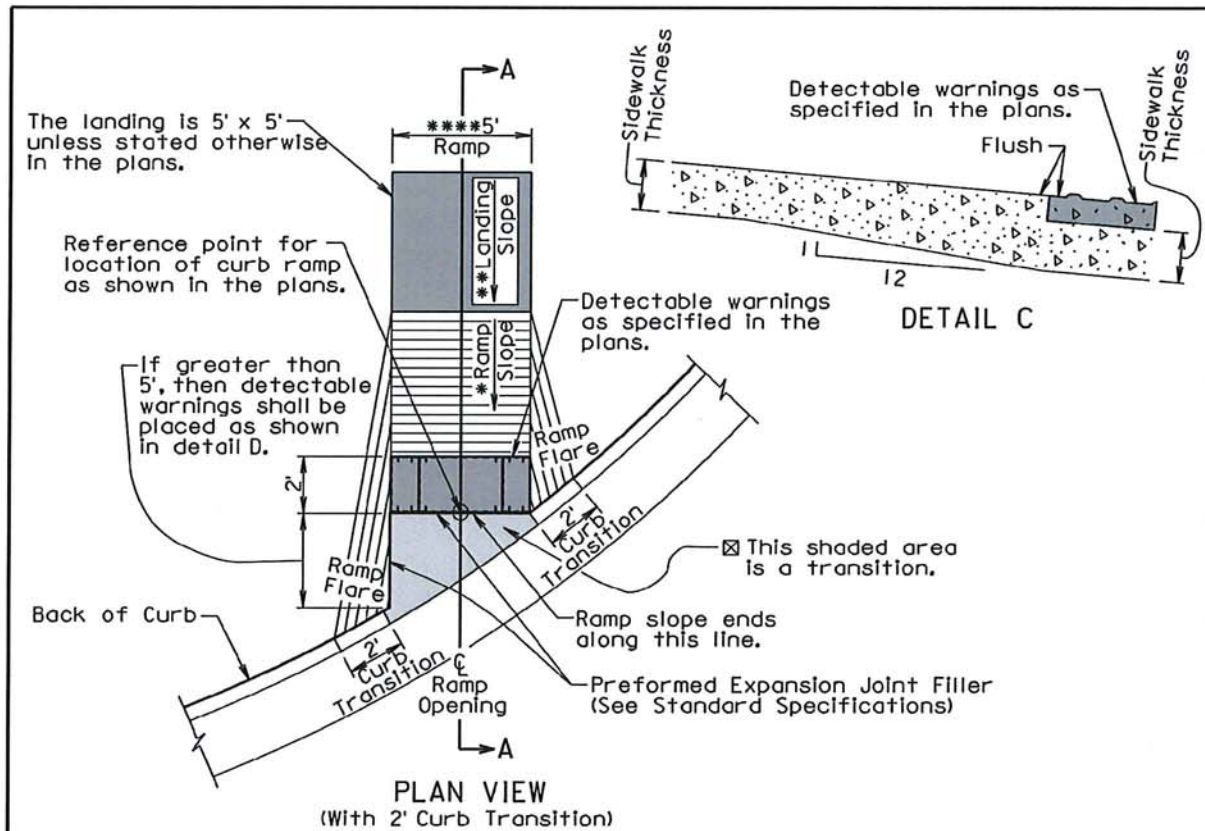


- ☒ The slope within the transition area shall not be steeper than a 20:1 (5%). The concrete within the transition shall be placed monolithic with the curb and gutter or fillet section concrete. The concrete thickness within the transition shall be the same as the curb and gutter or fillet section concrete thickness.
- \*\*\* The curb transition shall be a minimum of 6' long, a maximum of 10' long, and the curb transition slope shall not be steeper than a 10:1 (10%) unless stated otherwise in the plans.



June 26, 2009

<b>S D D O T</b>	<b>TYPE 2 CURB RAMP (DIRECTIONAL CURB RAMP)</b>	PLATE NUMBER <b>651.02</b>
	Published Date: 3rd Qtr. 2012	Sheet 1 of 3



The landing is 5' x 5' unless stated otherwise in the plans.

Reference point for location of curb ramp as shown in the plans.

If greater than 5', then detectable warnings shall be placed as shown in detail D.

Detectable warnings as specified in the plans.

This shaded area is a transition.

PLAN VIEW  
(With 2' Curb Transition)

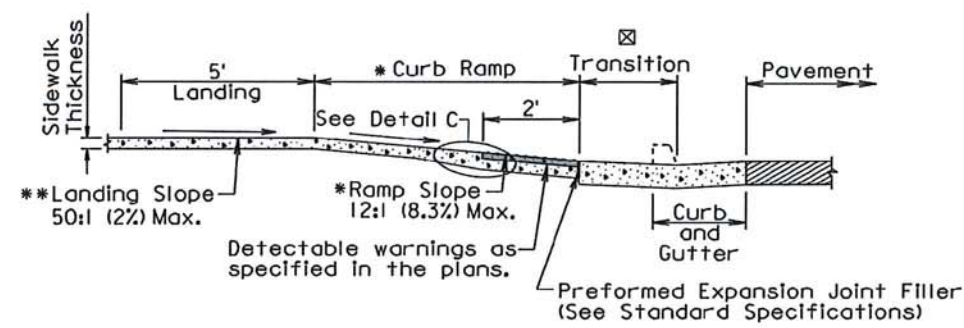
DETAIL C

\* The ramp slope shall be 12:1 (8.3%) maximum. The ramp length shall not exceed 15' unless stated otherwise in the plans. Ramp slopes are designed at 12:1 (8.3%) unless stated otherwise in the plans.

The cross slope of the ramp shall not be steeper than 50:1 (2%).

\*\* The landing slope shall not be steeper than a 50:1 (2%) in any direction of pedestrian travel.

\*\*\* The ramp width is 5' unless stated otherwise in the plans.



SECTION A-A

June 26, 2009

Published Date: 3rd Qtr. 2012	S D D O T	TYPE 2 CURB RAMP (DIRECTIONAL CURB RAMP)	PLATE NUMBER
			651.02
			Sheet 2 of 3

GENERAL NOTES:

For illustrative purpose only, type 1 detectable warnings are shown in the drawings.

The curb ramp depicted on this standard plate may be used with a PCC fillet section, with curved curb and gutter, or with straight curb and gutter. The curb ramp shall be placed at the location stated in the plans.

Sidewalk shall not be placed adjacent to the ramp flares when a 2' curb transition is used unless shown otherwise in the plans.

\* Care shall be taken to ensure a uniform grade on the ramp, free of sags and short grade changes.

Surface texture of the ramp shall be obtained by coarse brooming transverse to the slope of the ramp.

The normal gutter line profile shall be maintained through the area of the ramp.

Joints shall be sawed or tooled into the concrete adjacent to the detectable warnings to alleviate possible corner cracking.

Care shall be taken to ensure that the surface of the detectable warnings are clean and maintains a uniform color.

There will be no separate payment for curb ramps. The curb ramp shall be measured and paid for at the contract unit price per square foot for the corresponding concrete sidewalk bid item. The square foot area of the detectable warnings shall be included in the measured and paid for quantity of sidewalk.

The curb transitions and ramp opening shall be measured and paid for at the contract unit price per foot for the corresponding curb and gutter bid item when curb and gutter is used. The curb transitions and ramp opening shall be measured and paid for at the contract unit price per square yard for the corresponding PCC fillet section bid item when a PCC fillet section is used.

All costs for furnishing and installing the transition area at the base of the ramp shall be incidental to the contract unit price per foot for the corresponding curb and gutter bid item when curb and gutter is used and shall be incidental to the contract unit price per square yard for the corresponding PCC fillet section bid item when a PCC fillet section is used.

The type 1 detectable warnings shall be measured to the nearest square foot. All costs for furnishing and installing the type 1 detectable warnings including labor, equipment, materials, and incidentals shall be paid for at the contract unit price per square foot for "Type 1 Detectable Warnings".

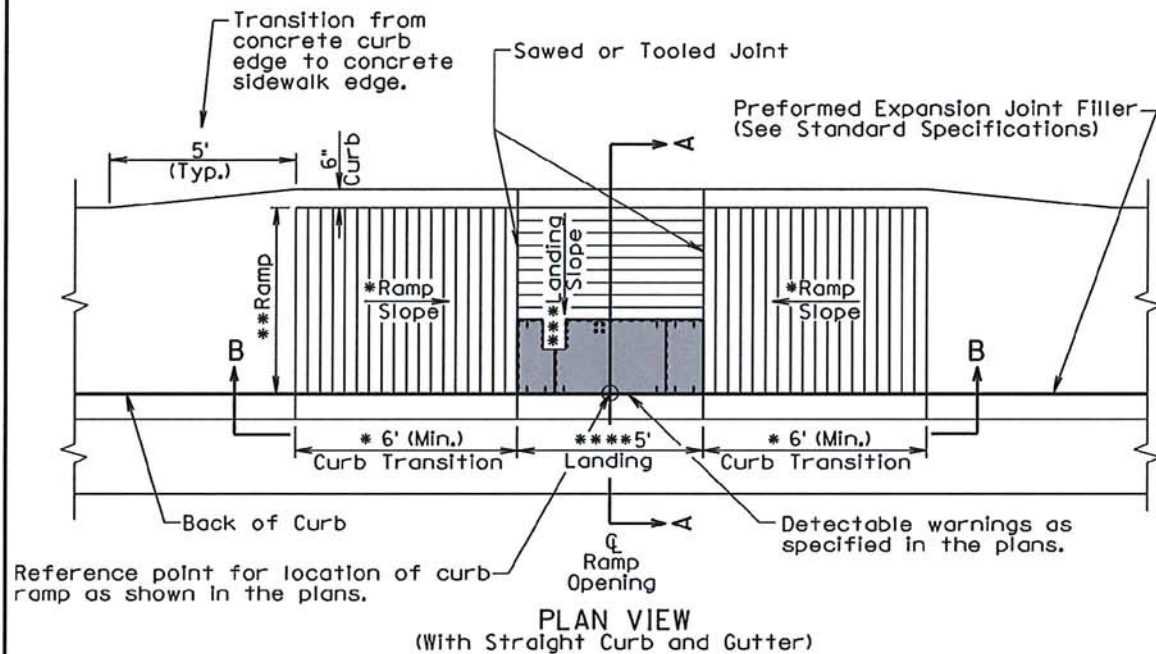
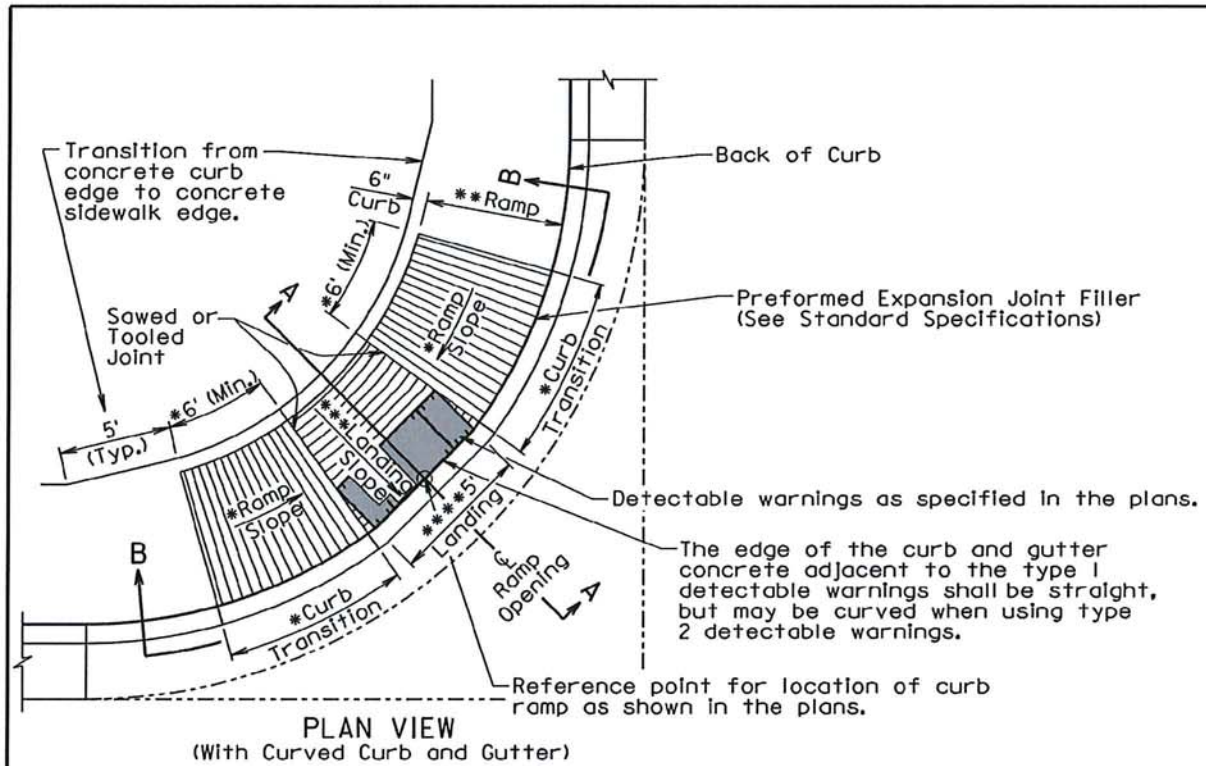
The type 2 detectable warnings shall be measured to the nearest square foot. All costs for furnishing and installing the type 2 detectable warnings including labor, equipment, and materials, including adhesive, necessary sealant or grout, and necessary grinding shall be paid for at the contract unit price per square foot for "Type 2 Detectable Warnings".

June 26, 2009

Published Date: 3rd Qtr. 2012	S D D O T	TYPE 2 CURB RAMP (DIRECTIONAL CURB RAMP)	PLATE NUMBER
			651.02
			Sheet 3 of 3

PAVEMENT DETAILS

DESIGNED BY: JACOB DILLER 5417 - PAVEMENT PLAN	DATE: 1/22/14
CHECKED BY: MAM	BY: DATE:
REVISIONS:	BY: DATE:



December 23, 2010

Published Date: 3rd Qtr. 2012

SDOT

**TYPE 3 CURB RAMP**  
(PARALLEL CURB RAMP)

PLATE NUMBER  
651.03

Sheet 1 of 3

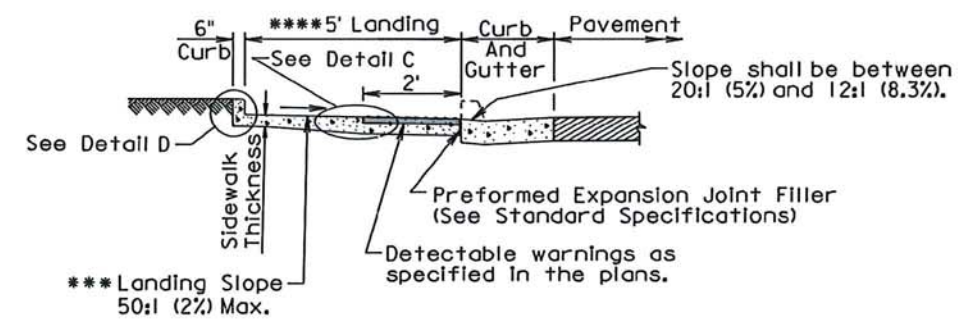
\* The curb transition slope shall match the ramp slope. The ramp slope, at any location of the ramp, shall be 12:1 (8.3%) maximum. The ramp length shall not exceed 15' unless stated otherwise in the plans. Ramp slopes are designed at 12:1 (8.3%) unless stated otherwise in the plans. The minimum length of the curb transition shall be 6'.

\*\* The ramp cross slope shall not be steeper than a 50:1 (2%) and the ramp width is 5' unless stated otherwise in the plans.

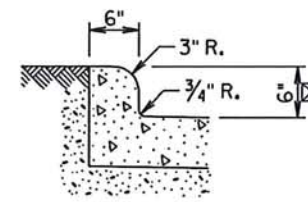
\*\*\* The landing slope shall not be steeper than a 50:1 (2%) in any direction of pedestrian travel.

\*\*\*\* The landing is 5' x 5' unless stated otherwise in the plans.

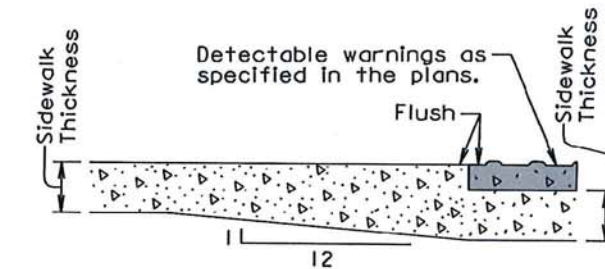
☒ The curb height shall be 6" unless stated otherwise in the plans.



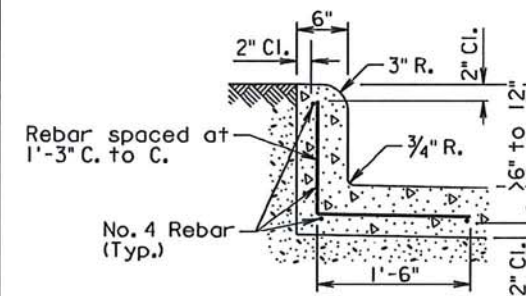
SECTION A-A



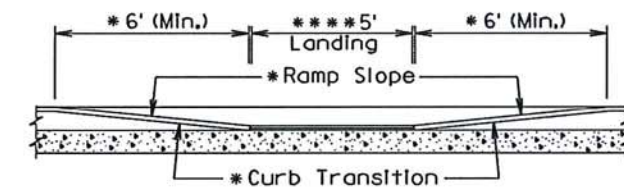
DETAIL D



DETAIL C



DETAIL D  
(Use this detail when the curb height is greater than 6" and less than 12")



SECTIONAL VIEW B-B

December 23, 2010

Published Date: 3rd Qtr. 2012

SDOT

**TYPE 3 CURB RAMP**  
(PARALLEL CURB RAMP)

PLATE NUMBER  
651.03

Sheet 2 of 3

**GENERAL NOTES:**

For illustrative purpose only, type 1 detectable warnings are shown in the drawings.

For illustrative purpose only, a PCC fillet section is shown in one of the drawings. The curb ramp depicted on this standard plate may be used with a PCC fillet section, with curved curb and gutter, or with straight curb and gutter.

The curb ramp shall be placed at the location stated in the plans.

Sidewalk adjacent to the curb ramp shall be as shown in the plans.

Care shall be taken to ensure a uniform grade on the ramp, free of sags and short grade changes.

Surface texture of the ramp shall be obtained by coarse brooming transverse to the slope of the ramp.

The normal gutter line profile shall be maintained through the area of the ramp.

Joints shall be sawed or tooled into the concrete adjacent to the detectable warnings to alleviate possible corner cracking (see plan view for joint location).

Care shall be taken to ensure that the surface of the detectable warnings are clean and maintains a uniform color.

When curb height is greater than 6" and less than 12", reinforcing steel is required in accordance with the detail on sheet 2 of 3. The reinforcing steel shall conform to ASTM A615, Grade 60. Cost for furnishing and installing the reinforcing steel shall be incidental to the contract unit price per square foot for the corresponding concrete sidewalk bid item.

There will be no separate payment for curb ramps. The curb ramp shall be measured and paid for at the contract unit price per square foot for the corresponding concrete sidewalk bid item. The square foot area of the detectable warnings and the curb along the short radius shall be included in the measured and paid for quantity of sidewalk.

The curb transitions and ramp opening shall be measured and paid for at the contract unit price per foot for the corresponding curb and gutter bid item when curb and gutter is used. The curb transitions and ramp opening shall be measured and paid for at the contract unit price per square yard for the corresponding PCC fillet section bid item when a PCC fillet section is used.

The type 1 detectable warnings shall be measured to the nearest square foot. All costs for furnishing and installing the type 1 detectable warnings including labor, equipment, materials, and incidentals shall be paid for at the contract unit price per square foot for "Type 1 Detectable Warnings".

The type 2 detectable warnings shall be measured to the nearest square foot. All costs for furnishing and installing the type 2 detectable warnings including labor, equipment, and materials, including adhesive, necessary sealant or grout, and necessary grinding shall be paid for at the contract unit price per square foot for "Type 2 Detectable Warnings".

December 23, 2010

Published Date: 3rd Qtr. 2012

**S  
D  
D  
O  
T**

**TYPE 3 CURB RAMP  
(PARALLEL CURB RAMP)**

PLATE NUMBER  
**651.03**

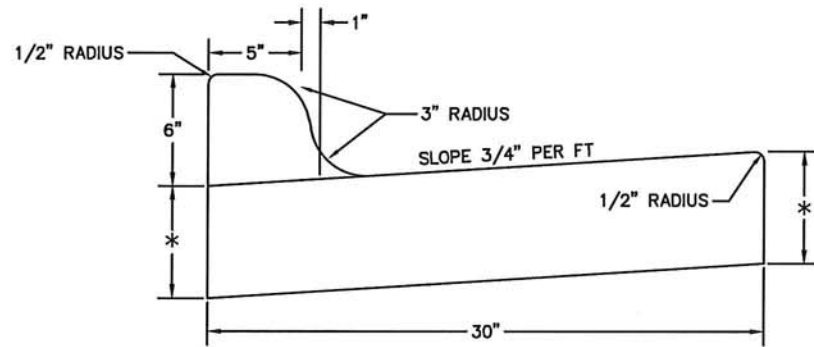
Sheet 3 of 3

**SAFE ROUTES TO SCHOOL**  
VARIOUS LOCATIONS  
LENNOX, SD

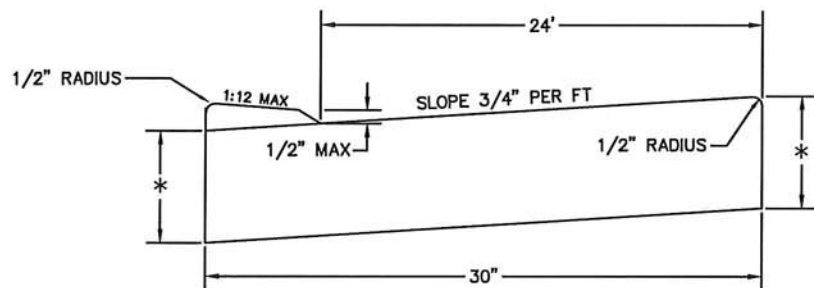
DESIGNED BY: JCF  
DRAWN BY: PK  
CHECKED BY: MMH  
REVISIONS:  
ACAD FILE: S412 - Pavement.dwg  
DATE: 1/22/14  
BY: DATE  
BY: DATE

**STOCKWELL ENGINEERS**  
SIOUX FALLS, SD

SHEET NO.  
**F-8**



**SPECIAL CURB AND GUTTER**



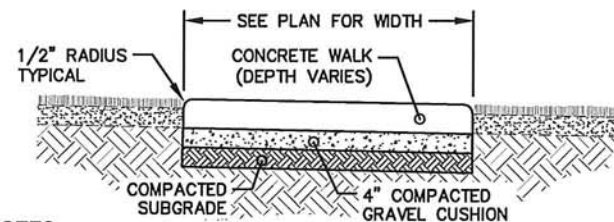
**DROP TYPE CURB AND GUTTER**

\* THICKNESS SHALL BE EQUAL TO THE DEPTH OF THE ADJOINING PAVEMENT BUT NOT LESS THAN 6".

**GENERAL**

ON PCC PAVEMENT A LONGITUDINAL CONSTRUCTION JOINT WITH TIE BARS SHALL BE USED WHEN CURB AND GUTTER IS POURED SEPARATELY.  
M-6 CONCRETE SHALL BE USED IN THE CONSTRUCTION OF THE CURB AND GUTTER.

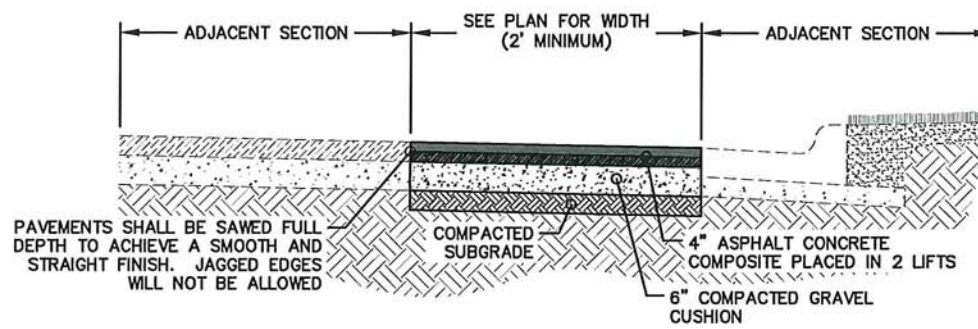
**CONCRETE CURB AND GUTTER SECTION**



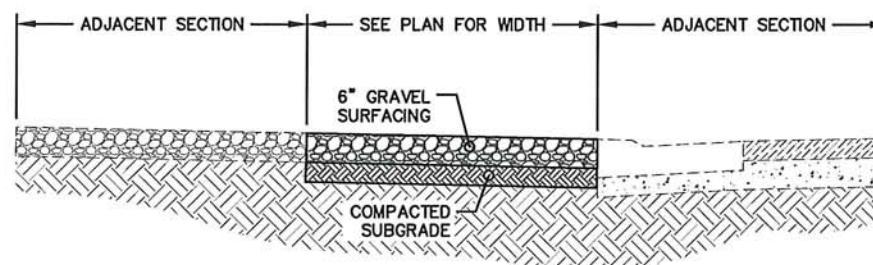
**NOTES:**

- BASE COURSE SHALL BE COMPACTED TO ENSURE A UNIFORM DEPTH OF PAVEMENT.
- MAXIMUM CROSS SLOPE SHALL BE 2.00%. POSITIVE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES.
- CONTROL JOINTS SHALL BE SPACED AS SHOWN ON THE PLANS. THE MAXIMUM SPACING FOR JOINTS SHALL BE 8 FEET. GENERALLY, CONTROL JOINTS SPACED AT AN EQUAL DISTANCE TO THE WIDTH OF THE WALK WHENEVER FEASIBLE, BUT SHALL BE ADJUSTED AS NECESSARY TO APPEAR UNIFORM.
- EXPANSION JOINTS SHALL BE INSTALLED AT LOCATIONS SHOWN ON THE PLANS OR AT A MAXIMUM LONGITUDINAL LENGTH OF 100 FEET.

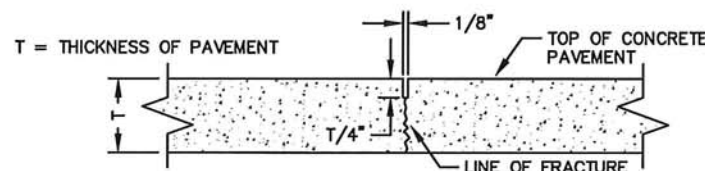
**CONCRETE WALK**



**ASPHALT PATCHING SECTION**



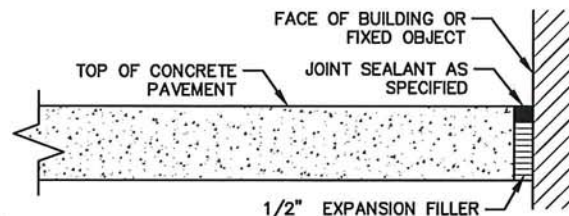
**GRAVEL APPROACH SECTION**



**NOTES:**

- WALK BEHIND SAW EQUIPMENT SHALL BE USED TO ENSURE STRAIGHT CUTS.
- JOINTS SHALL BE CUT AT A TIME ADEQUATE TO PREVENT RANDOM CRACKING. SAWING SHALL BE COMPLETED WITHIN 24 HOURS OF PLACEMENT.

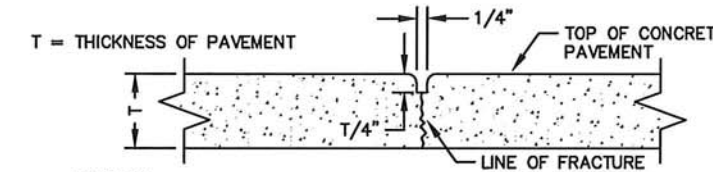
**SAWED CONTROL JOINT**



**NOTES:**

- ISOLATION JOINTS SHALL BE PLACED BETWEEN PAVEMENTS AND ALL FIXED OBJECTS AND BUILDING FOUNDATIONS.

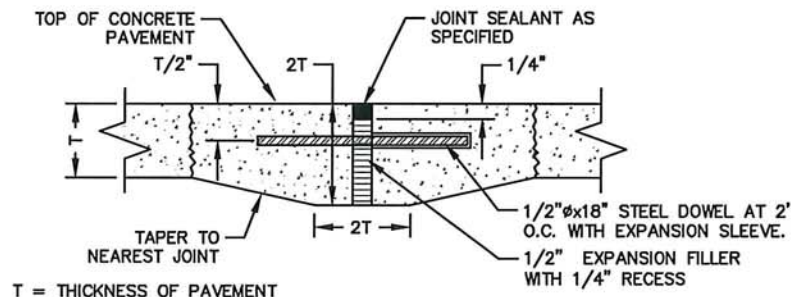
**ISOLATION JOINT**



**NOTES:**

- TOOLED JOINTS SHALL BE CONSTRUCTED TO PREVENT RANDOM CRACKS AND PROVIDE FREE MOVEMENT OF CONCRETE AT THE JOINT. JOINTS SHALL BE CONSTRUCTED WITH A TOOL THAT LEAVES ROUNDED CORNERS AND SCORES THE JOINT TO A MINIMUM DEPTH OF ONE INCH.

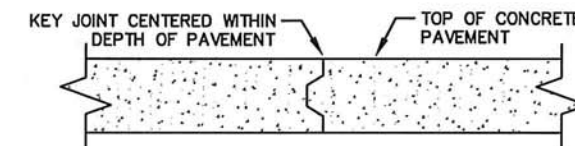
**TOOLED CONTROL JOINT**



**NOTES:**

- REINFORCED EXPANSION JOINTS SHALL BE INSTALLED AT LOCATIONS SHOWN ON THE PLANS.

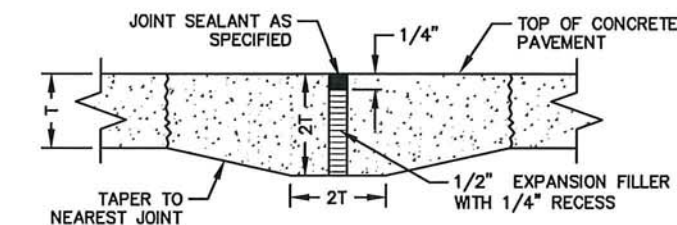
**REINFORCED EXPANSION JOINT**



**NOTES:**

- CONSTRUCTION JOINTS SHALL BE PLACED BETWEEN INDIVIDUAL POURS OF CONCRETE WHERE EXPANSION JOINTS ARE NOT INDICATED.

**CONSTRUCTION JOINT**



T = THICKNESS OF PAVEMENT

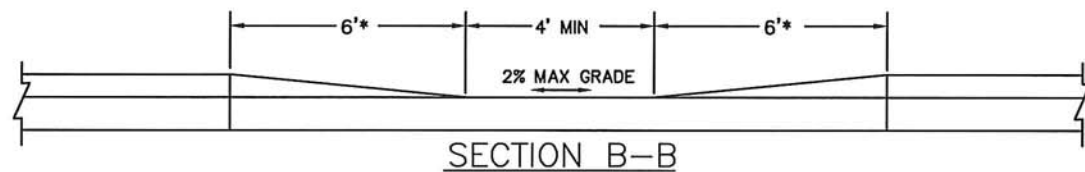
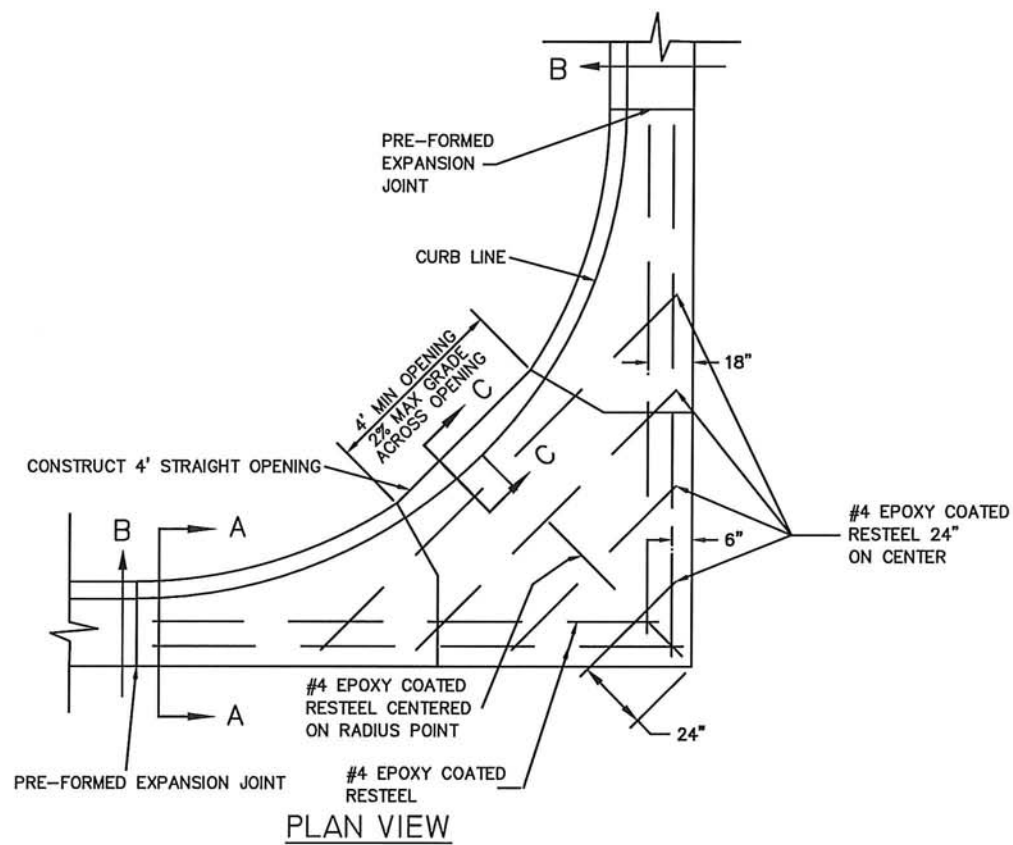
**NOTES:**

- EXPANSION JOINTS SHALL BE INSTALLED AT LOCATIONS SHOWN ON THE PLANS OR AT A MAXIMUM LONGITUDINAL LENGTH OF 100 FEET.

**EXPANSION JOINT**

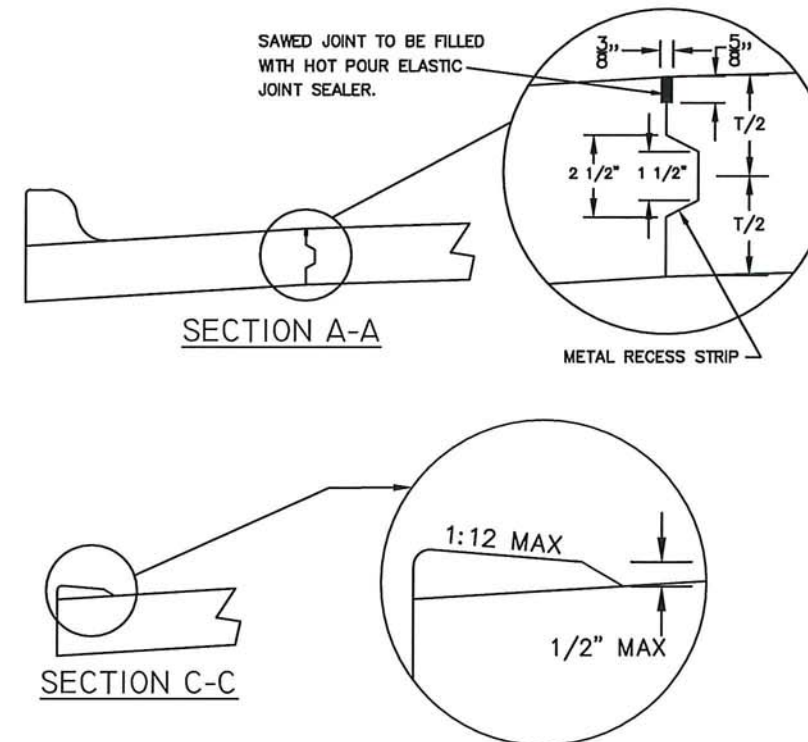






\* REQUIREMENT: WHEN BACK OF CURB SIDEWALK IS GOING TO BE INSTALLED IT WILL BE NECESSARY TO EXTEND THE TAPER LENGTH ACCORDING TO TABLE BELOW TO ACHIEVE THE 8.33% MAXIMUM RUNNING SLOPE ON THE SIDEWALK RAMP ADJACENT TO THE CURB. THE TAPER LENGTH WILL BE LIMITED TO 15' IN LENGTH.

STREET GRADE	TAPER LENGTH 1:12 MAX	
	LOW SIDE	HIGH SIDE
1%	6'-0"	7'-2"
2%	6'-0"	8'-4"
3%	6'-0"	10'-0"
4%	6'-0"	12'-6"
5% +	6'-0"	15'-0"



**GENERAL NOTES**

ALL REINFORCING STEEL SHALL HAVE 1-1/2" CLEARANCE AND SHALL CONFORM TO A.S.T.M. A615, GRADE 40.

M-6 CONCRETE SHALL BE USED IN THE CONSTRUCTION OF THE FILLETS.

THE CURB SHALL BE MONOLITHIC WITH THE FILLET. NO SEPARATE PAYMENT WILL BE MADE FOR THE CURB AS IT WILL BE CONSIDERED PART OF THE FILLET.

FILLET DEPTH SHALL BE EQUAL TO THE DEPTH OF ADJOINING PAVEMENT BUT NOT LESS THAN 6".

FILLETS ADJACENT TO PCC PAVEMENT SHALL HAVE A KEYWAY CONSTRUCTION JOINT WITHOUT TIE BAR.

FILLETS SHALL BE MEASURED AND PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE YARD OF FILLET SECTION. PAYMENT INCLUDES ALL LABOR AND MATERIALS NECESSARY TO COMPLETE THE WORK.



**STRIPING AND SIGNAGE NOTES**

**PAVEMENT MARKING**

The pavement marking paint shall be applied as defined in Section 633 of the Standard Specifications for Roads and Bridges. The pavement marking paint shall conform to Section 980 of the Standard Specifications for Roads and Bridges.

Glass beads shall be mixed with the pavement marking paint as outlined in Section 633 of the Standard Specifications for Roads and Bridges. Glass beads shall conform to Section 981 of the Standard Specifications for Roads and Bridges.

Application of permanent pavement markings shall be completed prior to opening roadway to traffic.

**CONSTRUCTION REQUIREMENTS**

Highway signs and delineators shall comply with the MUTCD and Standard Highway Signs, issued by the U.S. Department of Transportation, FHWA.

Traffic Sign Installation:

- A. **Location and Position:** The location of each sign shall be established by referring to the station located on the Permanent Sign Installation table. The installation of the sign shall correspond to the typical sign mounting details.

Traffic signs shall be installed on posts, light poles, or mast arms as specified in the contract. The Contractor will be responsible to furnish the necessary mounting hardware for each sign.

- B. **Perforated Tube Posts:** Post size will be specified in the contract for each type of sign. Sign post lengths shown in the contract are estimates for bidding purposed only. The exact post lengths will be determined during construction. Posts shall be in a plumb position. Unless otherwise specified all signs, including those salvaged for reset by the Contractor will be placed on new posts.

**PERMANENT SIGNING:**

The Contractor shall furnish all signs, posts, stiffeners, bases, hardware, and labor for installation of permanent signs in size, type, and quantity as shown in these plans and/or as required by the Engineer.

The Contractor shall provide all labor and equipment necessary to install permanent signing, as detailed in these plans and/or as required by the Engineer. Payment for furnishing and installing permanent signs will be paid for at the contract unit price for each type of sign based on sheeting requirements per square foot of sign. All signs shall have ASTM D4956 Type IV (High Intensity). Payment for new signposts, hardware, bases, and labor will be made at the contract unit price per foot for 2.0" x 2.0" PERFORATED TUBE POST. See breakaway post details, and fixed post details regarding posts, hardware, bases, and footings. Measurement of post lengths for payment will be for above ground post lengths as field measured. The sign post contract items shall include post bases and all hardware. The lengths of the posts in the sign tables are approximate lengths only. The post lengths shall be verified by the Contractor. The Contractor is urged to cut posts to length on job site after site by site verifications of post length.

The Contractor shall use Telespar brand (or equals) posts and bases on all new standard highway signs as approved by the Engineer. All post materials shall conform to Section 982 of the Standard Specifications, and be in accordance with ASTM specifications. Signs designated as requiring a shear slip base shall have a 4 foot long base assembly with a shear breakaway base connecting the base to the signpost. The height of the post shall not exceed the minimum height needed by more than 0.5 feet. Any portion that extends above the sign shall be cut off. No separate payment will be made for cutting the post or for that length cut off. All sign assemblies mounted in concrete surfacing shall utilize a flush mount breakaway post base. All posts and bases shall be accompanied by Certificates of Compliance and shall meet all safety standards as set forth in the current edition of the Manual on Uniform Traffic Control Devices (MUTCD).

The Contractor shall stake the signs and the Engineer will verify the location prior to installation. The lateral distance from the roadway and the height of the sign shall be established by the Contractor according to the Standard Plates in the plans and the MUTCD.

**PERFORATED TUBE POST:**

Payment for 2.0" x 2.0" perforated tube post shall include all cost for labor, equipment, and materials necessary to complete the following work:

1. Furnish all posts, stiffeners, breakaway bases, soil stabilizers, and hardware.
2. Assembly and installation of breakaway base sign supports as per details shown in these plans.
3. Assembly of sign(s) to sign post as per erection details for Highway Signs as shown in these plans.
4. Installation of signpost and sign(s).

**SHEETING REQUIREMENTS:**

All legend and border utilizing the color black shall be vinyl or screen printed black, non-reflectORIZED material. All other legend and border shall be of same type of sheeting as the background of the same sign. All signs in the table for Permanent Signing that call for Type IV sheeting shall have High Intensity Prismatic retroreflective background, Type IV as per AASHTO designation M 268 (ASTM D4956-04).

**SIGN LEGEND, BORDER, BACKGROUND, AND MOUNTING:**

All sign material shall comply with Section 982 of the Standard Specifications for Roads & Bridges, 2004 Edition.

All upper case letters, lowercase letters and all numerals shall be as shown in these plans.

The sign colors shall be as stipulated in the MUTCD and as shown in the sign details.

The border on all signs 3 feet or less in height shall be 1 inch wide. The border on all signs greater than 3 feet in height shall be 2 inches wide. The corner radius on all signs 3 feet or less in height shall be 3 inches.

When signs are vertically mounted in succession, they shall be 1-2 inches apart. Lateral placement of signs shall be determined by the Engineer.

**SOLAR POWERED PEDESTRIAN CROSSING FLASHING BEACON**

Solar Powered Pedestrian Crossing Flashing Beacons shall conform to FHWA Interim Approval Memorandum (1A-11). Beacons shall be provided at the locations specified in the plans and constructed in accordance with the detail in section "M" of the plans. Beacons shall operate in a flash pattern in conformance with the MUTCD. Activation of the beacon shall be pedestrian actuated by means of a push button. Approved manufacturer includes Tapco (RRFB-XL), JSF Technologies (AB-9404) or approved equal.

Support poles and bases shall meet the requirements for traffic signals and structural supports as required by AASHTO. Approved manufacturers include Pelco Products and Tapco or approved equal.

A foundation anchor shall be installed to anchor the pedestal. Foundation anchors shall be hot dip galvanized per ASTM A-123. Bolts shall be Grade 5 galvanized. Foundation anchors shall have a minimum shaft length of 60-inches. Approved manufacturers include Pelco Products, Inc. or approved equal.

Pedestrian beacons shall be measured on a per each installed basis and shall include all costs to supply and erect the beacon. All costs for items such as the signal pole, footing, foundation anchor, signage, control cabinet, push button, solar panel, any mounting hardware, labor and other items that do not include a separate bid item but are necessary to construct the beacon as specified shall be considered incidental to the beacon and shall be included in the contractor's unit price.

**SOLAR POWERED SCHOOL ZONE RADAR/FLASHING BEACON**

Radar Speed Sign, Solar Powered shall be provided at the locations specified in the plans and constructed in accordance with the detail in section "M" of the plans. Radar Speed Sign, Solar Powered shall operate in a flash pattern in conformance with the MUTCD. Approved manufacturer includes Tapco (BlinkerSign RU2 FAST 275) or approved equal.

Support poles and bases shall meet the requirements for traffic signals and structural supports as required by AASHTO. Approved manufacturers include Pelco Products and Tapco or approved equal.

A foundation anchor shall be installed to anchor the pedestal. Foundation anchors shall be hot dip galvanized per ASTM A-123. Bolts shall be Grade 5 galvanized. Foundation anchors

shall have a minimum shaft length of 60-inches. Approved manufacturers include Pelco Products, Inc or approved equal.

Radar Speed Sign, Solar Powered shall be measured on a per each installed basis and shall include all costs to supply and erect the sign. All costs for items such as the signal pole, footing, foundation anchor, signage, control cabinet, solar panel, any mounting hardware, labor and other items that do not include a separate bid item but are necessary to construct the sign as specified shall be considered incidental to the sign and shall be included in the contractor's unit price.

**SAFE ROUTES TO SCHOOL**  
VARIOUS LOCATIONS  
LENNOX, SD

STRIPING AND SIGNAGE NOTES  
DESIGNED BY: JDF  
DRAWN BY: PK  
CHECKED BY: MAM  
REVISIONS:

ACAD FILE: 5412 - Striping and Signage Notes  
DATE: 1/22/14  
BY: DATE:  
BY: DATE:

**STOCKWELL ENGINEERS**  
SIOUX FALLS, SD

SHEET NO.  
**M-1**



**TABLE OF PERMANENT SIGNS**

LOCATION	DESCRIPTION	SIGN CODE	SIZE	TRAFFIC SIGN AREA (SF)	2.0"x2.0" Tube (FT)	F&I TRAFFIC SIGN ON POST (EACH)	F&I TRAFFIC SIGN ON BEACON (EACH)
SEE SHEET M-6	STOP HERE FOR PEDESTRIANS	R1-5bL	18"X18"	2.25	9'-0"	1	
SEE SHEET M-6	STOP HERE FOR PEDESTRIANS	R1-5BI	18"X18"	2.25	9'-0"	1	
SEE SHEET M-6	AHEAD	R3-17a	30"X12"	2.5		1	
SEE SHEET M-7	AHEAD	R3-17a	30"X12"	2.5		1	
SEE SHEET M-6	SCHOOL CROSSING SYMBOL	S1-1	36"X36"	6.8	10'-8"	1	
SEE SHEET M-6	SCHOOL CROSSING SYMBOL	S1-1	36"X36"	6.8			1
SEE SHEET M-6	SCHOOL CROSSING SYMBOL	S1-1	36"X36"	6.8			1
SEE SHEET M-6	SCHOOL CROSSING SYMBOL	S1-1	36"X36"	6.8			1
SEE SHEET M-6	SCHOOL CROSSING SYMBOL	S1-1	36"X36"	6.8			1
SEE SHEET M-7	SCHOOL CROSSING SYMBOL	S1-1	36"X36"	6.8	10'-8"	1	
SEE SHEET M-6	END SCHOOL ZONE	S5-2	24"X30"	5.0	10'-0"	1	
SEE SHEET M-6	END SCHOOL ZONE	S5-2	24"X30"	5.0	10'-0"	1	
SEE SHEET M-7	END SCHOOL ZONE	S5-2	24"X30"	5.0	10'-0"	1	
SEE SHEET M-7	END SCHOOL ZONE	S5-2	24"X30"	5.0	10'-0"	1	
SEE SHEET M-6	RT. DIAGONAL ARROW PLAQUE	W16-7pR	24"X12"	2.0			1
SEE SHEET M-6	RT. DIAGONAL ARROW PLAQUE	W16-7pR	24"X12"	2.0			1
SEE SHEET M-6	LT. DIAGONAL ARROW PLAQUE	W16-7pL	24"X12"	2.0			1
SEE SHEET M-6	LT. DIAGONAL ARROW PLAQUE	W16-7pL	24"X12"	2.0			1
<b>TOTALS</b>				<b>78.3</b>	<b>79'4"</b>	<b>10</b>	<b>8</b>

STRIPING AND SIGNAGE NOTES

DESIGNED BY: JDF  
 DRAWN BY: PK  
 CHECKED BY: MMM  
 REVISIONS:  
 ACAD FILE: 5412 - Striping and Signage Notes  
 DATE: 1/22/14  
 BY: DATE:

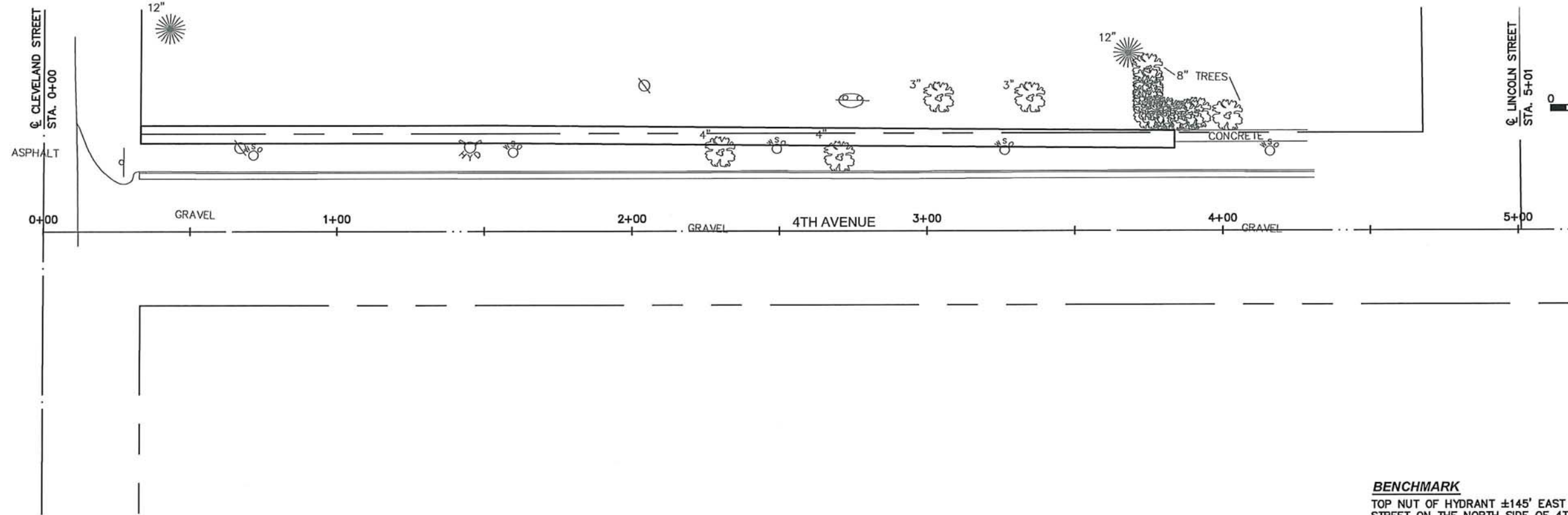
**STOCKWELL ENGINEERS**  
SIOUX FALLS, SD



**LEGEND**

- 6W - PAVEMENT MARKING, 6" WHITE
- 24W - PAVEMENT MARKING, 24" WHITE

NO WORK THIS PAGE



**BENCHMARK**  
 TOP NUT OF HYDRANT ±145' EAST OF CLEVELAND STREET ON THE NORTH SIDE OF 4TH AVENUE - ELEV. 1337.77

SAFE ROUTES TO SCHOOL

4TH AVENUE  
LENNOX, SD

STRIPING & SIGNAGE PLAN

DESIGNED BY: JCF  
 CHECKED BY: MAM  
 REVISIONS:  
 ACAD FILE: 5417 - SIGNAGE  
 DATE: 1/22/14  
 BY: DATE:  
 BY: DATE:

STOCKWELL ENGINEERS  
SIOUX FALLS, SD



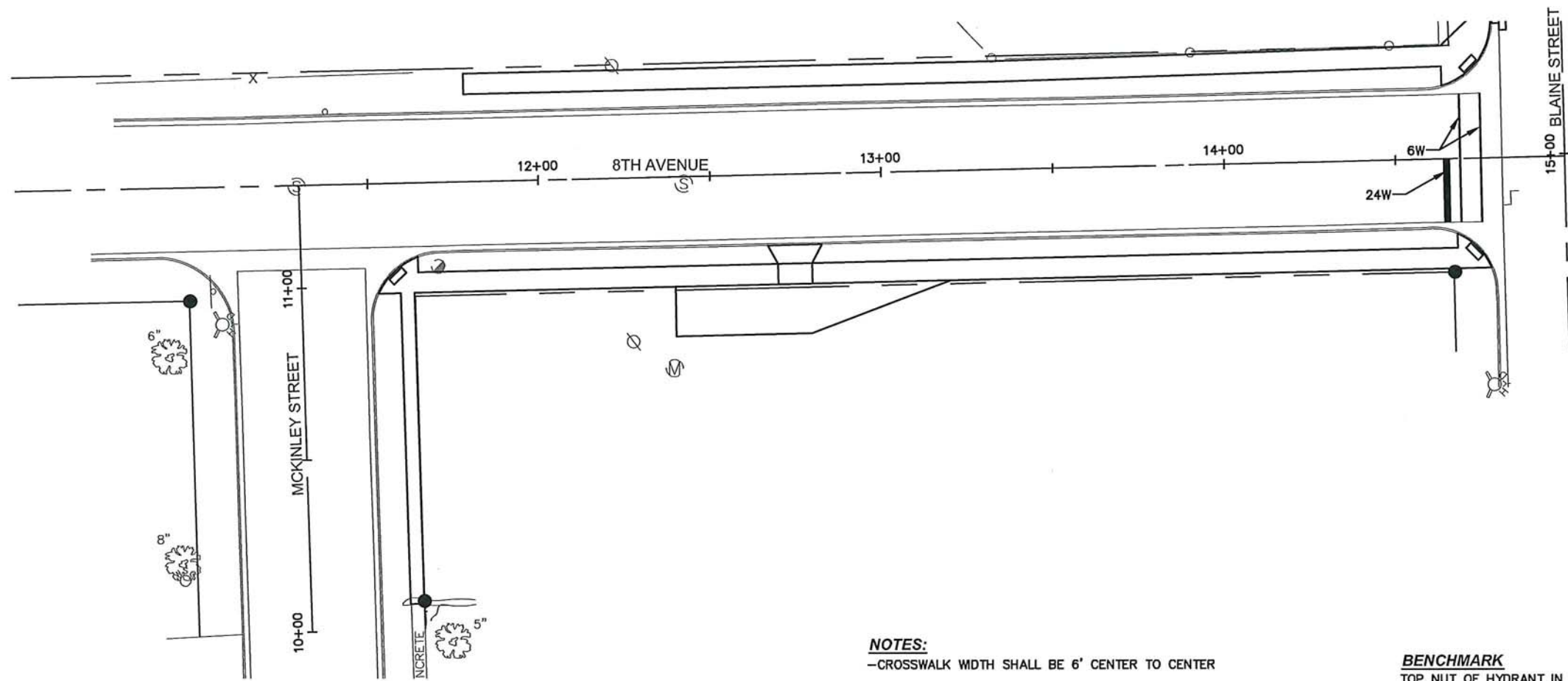
SHEET NO.

M-3



**QUANTITIES**

75 LF - PAVEMENT MARKING PAINT, 6" WHITE  
 18 LF - PAVEMENT MARKING PAINT, 24" WHITE

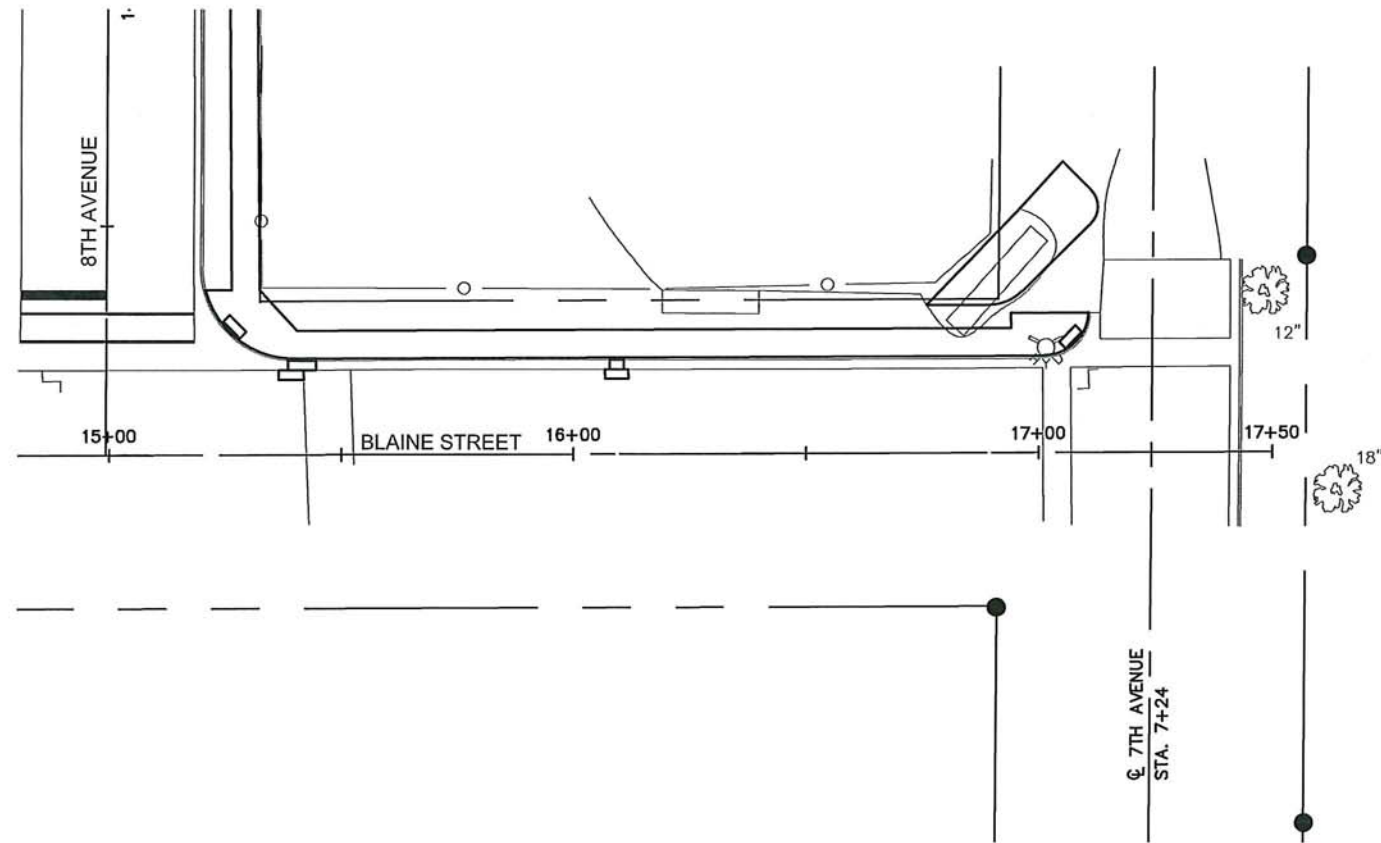


**NOTES:**

- CROSSWALK WIDTH SHALL BE 6' CENTER TO CENTER
- STOP BAR SHALL BE PLACED A MINIMUM OF 4' BEHIND CROSSWALK

**BENCHMARK**

TOP NUT OF HYDRANT IN SOUTHWEST CORNER OF MCKINLEY STREET & 8TH AVENUE - ELEV. 1330.14



**BENCHMARK**

TOP NUT OF HYDRANT IN SOUTHWEST CORNER OF 7TH AVENUE & BLAINE STREET - ELEV. 1333.95



STRIPING & SIGNAGE PLAN

DESIGNED BY: JDF  
 CHECKED BY: MAM  
 REVISIONS: \_\_\_\_\_  
 DATE: 1/22/14

**STOCKWELL ENGINEERS**  
 SIOUX FALLS, SD

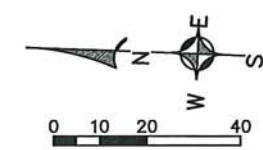
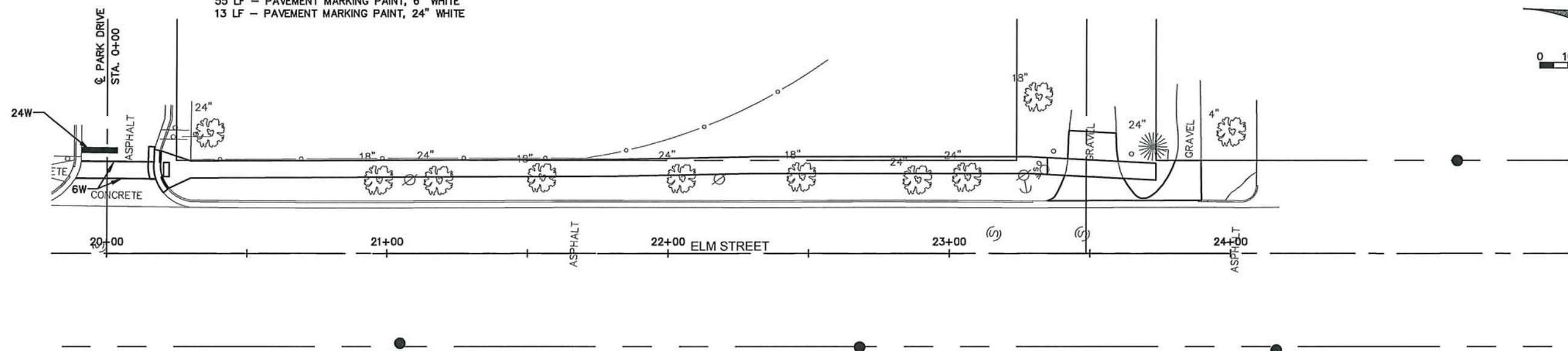
SHEET NO.

**M-4**

**SAFE ROUTES TO SCHOOL**  
 MCKINLEY STREET, 8TH STREET & BLAINE STREET  
 LENNOX, SD

**QUANTITIES**

55 LF - PAVEMENT MARKING PAINT, 6" WHITE  
 13 LF - PAVEMENT MARKING PAINT, 24" WHITE



**NOTES:**

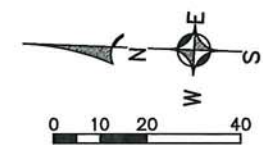
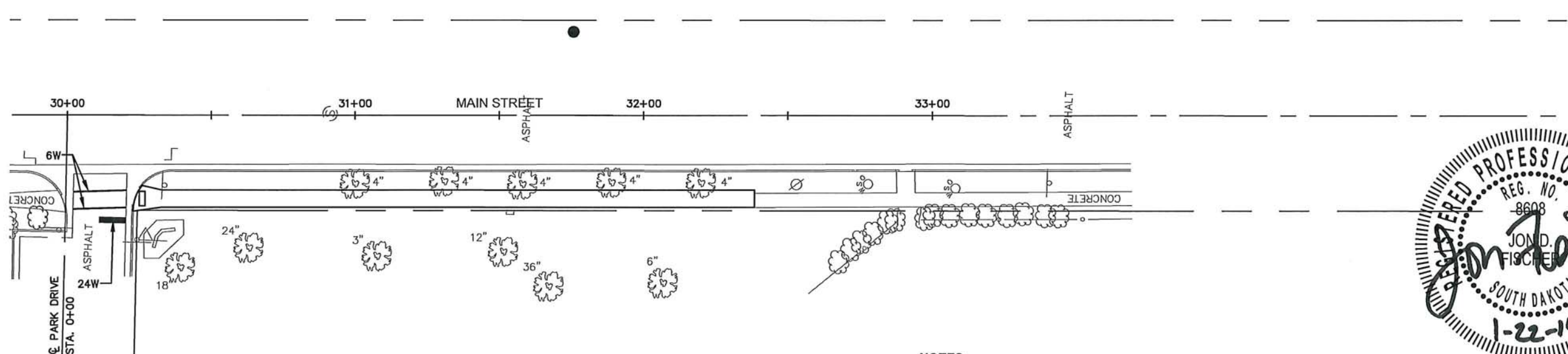
- CROSSWALK WIDTH SHALL BE 6' CENTER TO CENTER
- STOP BAR SHALL BE PLACED A MINIMUM OF 4' BEHIND CROSSWALK

**BENCHMARK**

TOP NUT OF HYDRANT IN SOUTHWEST CORNER OF  
 ELM STREET & 9TH AVENUE - ELEV. 1336.26

**QUANTITIES**

37 LF - PAVEMENT MARKING PAINT, 6" WHITE  
 9 LF - PAVEMENT MARKING PAINT, 24" WHITE



**NOTES:**

- CROSSWALK WIDTH SHALL BE 6' CENTER TO CENTER
- STOP BAR SHALL BE PLACED A MINIMUM OF 4' BEHIND CROSSWALK

**BENCHMARK**

TOP NUT OF HYDRANT IN NORTHWEST CORNER OF  
 MAIN STREET & PARK DRIVE - ELEV. 1341.60



STRIPING & SIGNAGE PLAN

DESIGNED BY: JDF	ACAD DATE: 5/17/14	STRIPING DATE: 1/22/14
CHECKED BY: MAM	DATE:	DATE:
REVISIONS:	BY:	DATE:

**STOCKWELL ENGINEERS**  
 SIOUX FALLS, SD

SHEET NO.

**M-5**

**SAFE ROUTES TO SCHOOL**  
 ELM STREET & MAIN STREET  
 LENNOX, SD





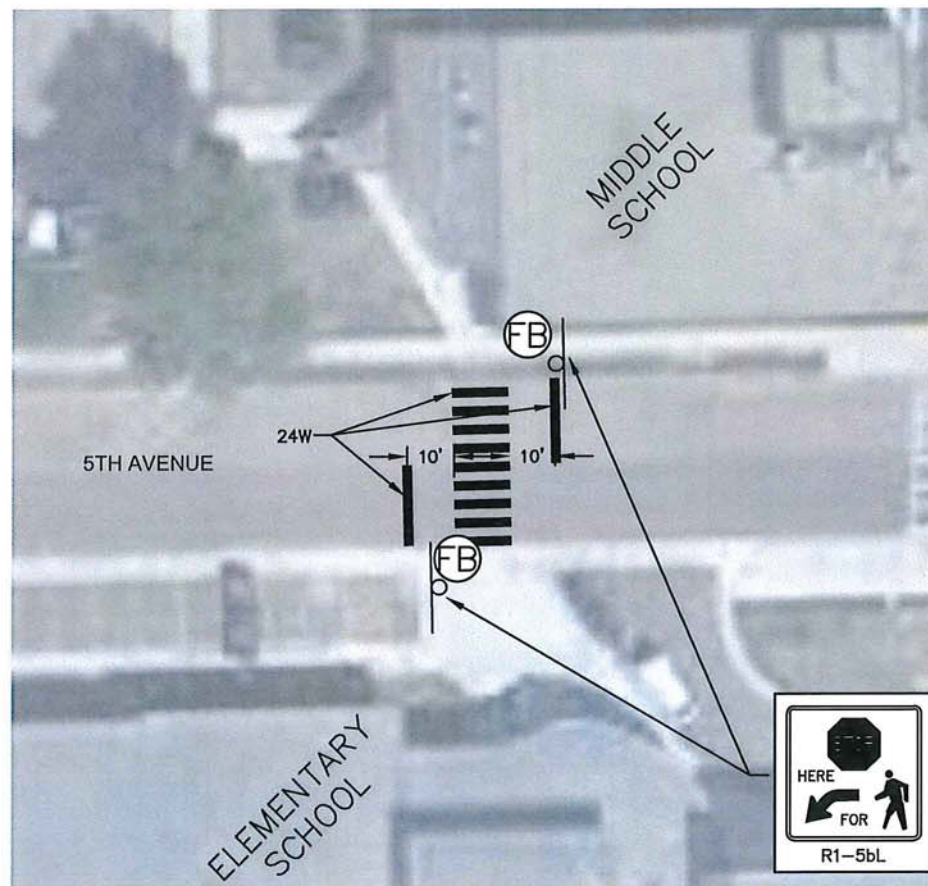
**QUANTITIES**  
 2 EA - SOLAR POWERED SCHOOL ZONE RADAR/FLASHING BEACON  
 1 EA - SIGN, S1-1 (36"X36")  
 2 EA - SIGN, S5-2 (24"X30")  
 1 EA - SIGN, R3-17a (30"X12")  
 30.7 LF - 2.0"X2.0" PERFORATED TUBE POST

SAFE ROUTES TO SCHOOL  
 ELM STREET & 5TH AVENUE  
 LENNOX, SD

STRIPING & SIGNAGE PLAN  
 DESIGNED BY: JF  
 ACAD. DATE: 1/22/14  
 CHECKED BY: JAM  
 DATE: 1/22/14  
 REVISIONS:  
 BY: JAM  
 DATE: 1/22/14

**LEGEND**

-  - PROPOSED SOLAR POWERED PEDESTRIAN CROSSING FLASHING BEACON
-  - PROPOSED SOLAR POWERED SCHOOL ZONE RADAR/FLASHING BEACON




**QUANTITIES**  
 184 LF - PAVEMENT MARKING PAINT, 24" WHITE  
 2 EA - SOLAR POWERED PEDESTRIAN CROSSING FLASHING BEACON  
 2 EA - SIGN, R1-5bL, (18"X18")  
 18 LF - 2.0"X2.0" PERFORATED TUBE POST



STOCKWELL ENGINEERS  
 SIOUX FALLS, SD

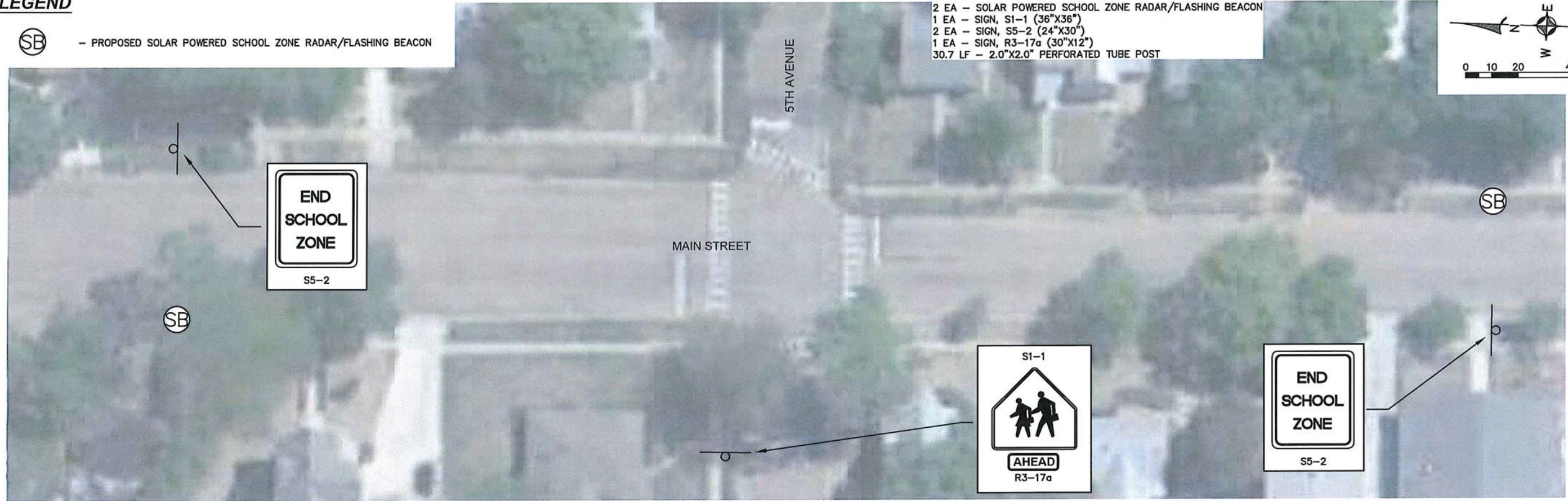
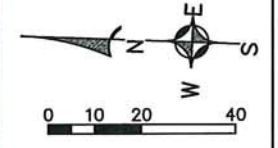
SHEET NO.  
 M-6

**LEGEND**

 - PROPOSED SOLAR POWERED SCHOOL ZONE RADAR/FLASHING BEACON

**QUANTITIES**

- 2 EA - SOLAR POWERED SCHOOL ZONE RADAR/FLASHING BEACON
- 1 EA - SIGN, S1-1 (36"X36")
- 2 EA - SIGN, S5-2 (24"X30")
- 1 EA - SIGN, R3-17a (30"X12")
- 30.7 LF - 2.0"X2.0" PERFORATED TUBE POST



SAFE ROUTES TO SCHOOL  
MAIN STREET & 5TH AVENUE  
LENNOX, SD

DESIGNED BY: JDF  
CHECKED BY: MAM  
DATE: 1/22/14

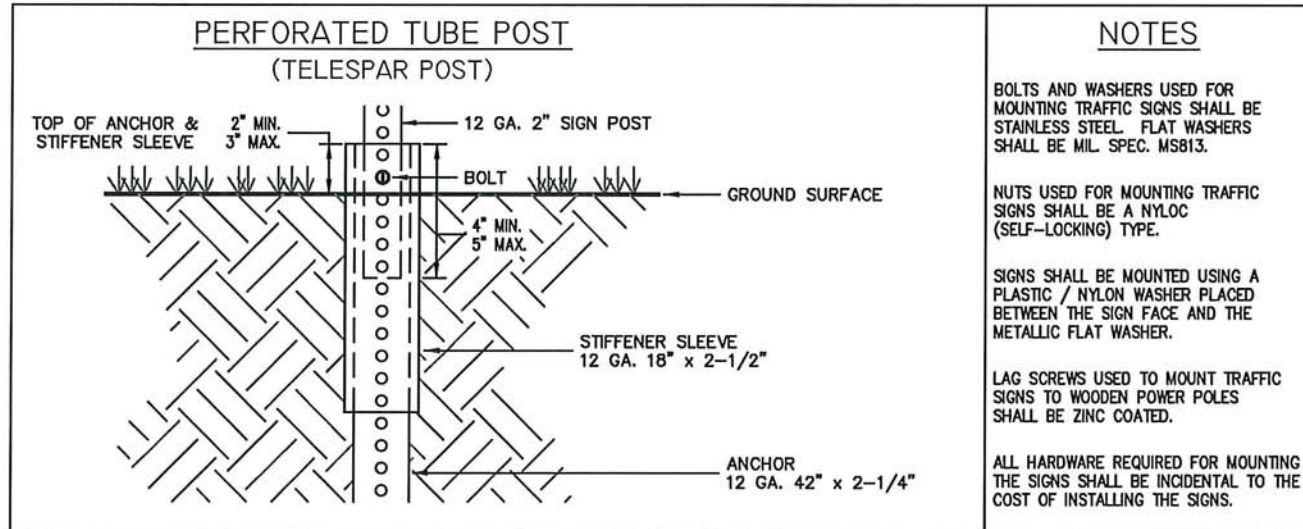
STRIPING & SIGNAGE PLAN



**STOCKWELL ENGINEERS**  
SIOUX FALLS, SD

SHEET NO.  
**M-7**





### NOTES

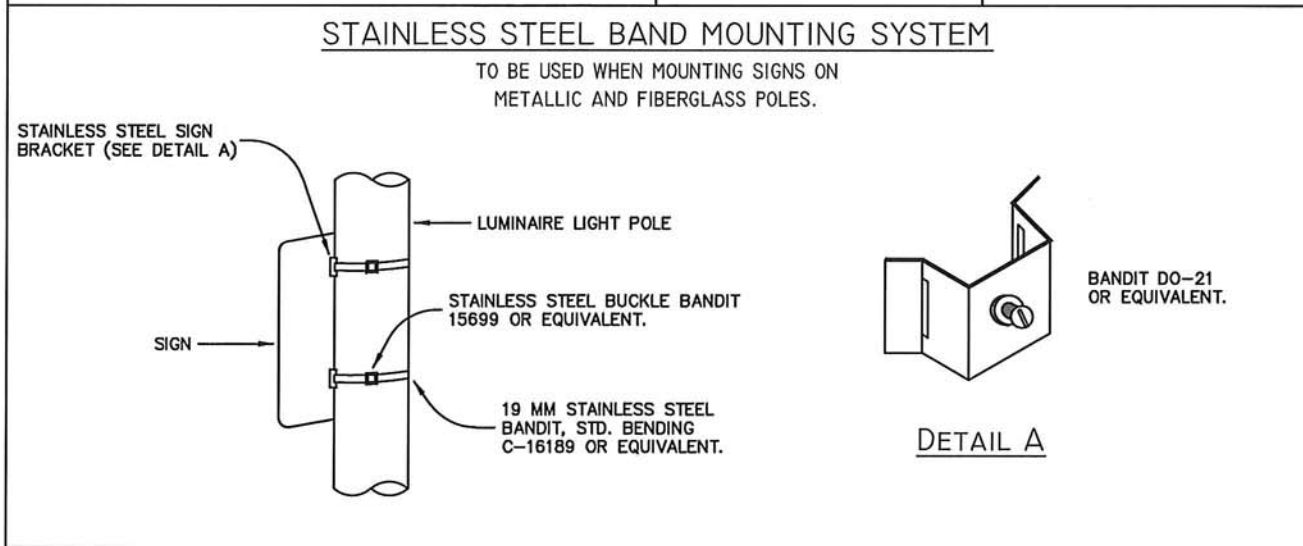
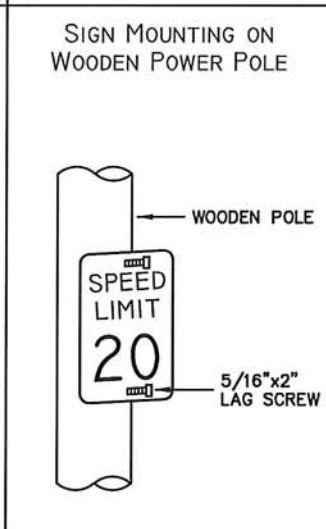
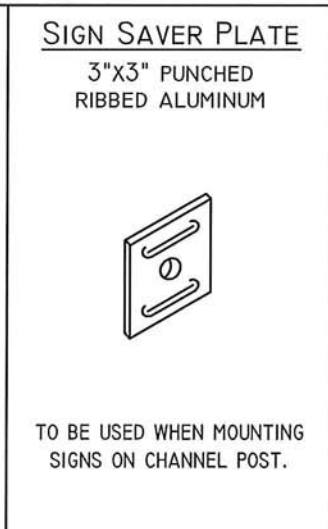
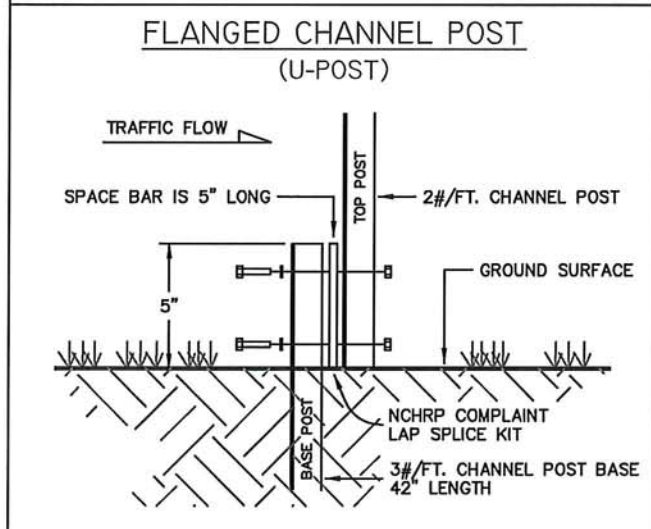
BOLTS AND WASHERS USED FOR MOUNTING TRAFFIC SIGNS SHALL BE STAINLESS STEEL. FLAT WASHERS SHALL BE MIL. SPEC. MS813.

NUTS USED FOR MOUNTING TRAFFIC SIGNS SHALL BE A NYLOC (SELF-LOCKING) TYPE.

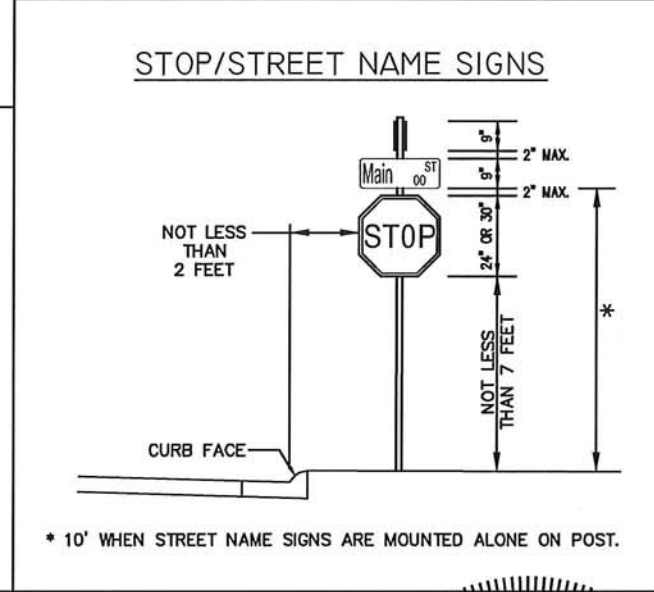
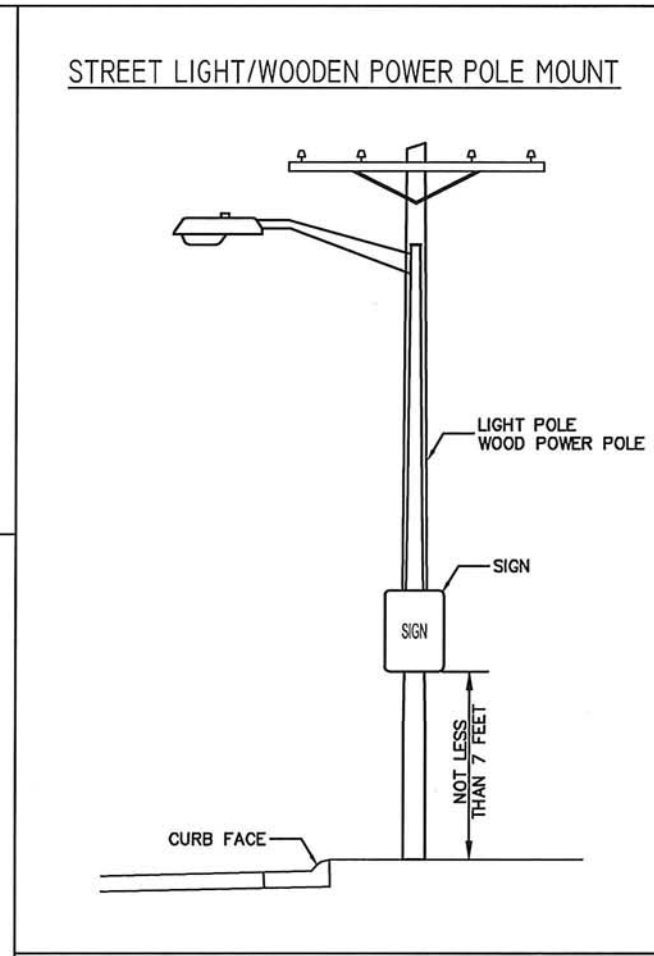
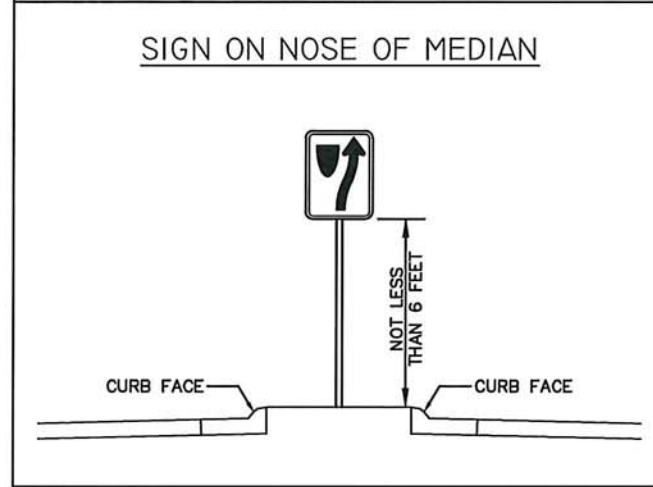
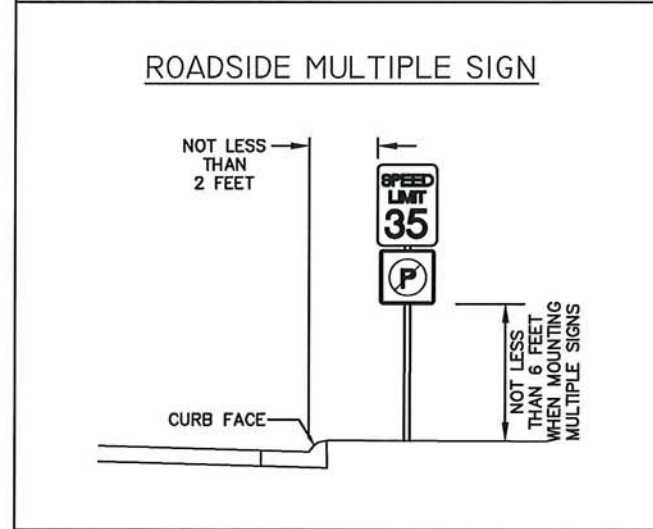
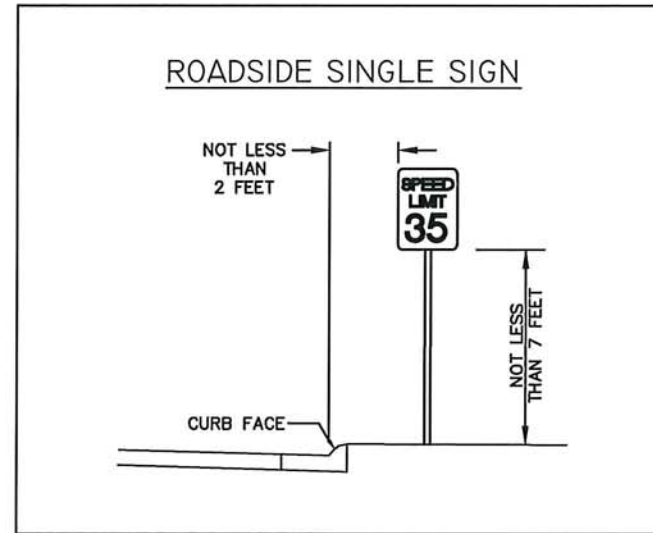
SIGNS SHALL BE MOUNTED USING A PLASTIC / NYLON WASHER PLACED BETWEEN THE SIGN FACE AND THE METALLIC FLAT WASHER.

LAG SCREWS USED TO MOUNT TRAFFIC SIGNS TO WOODEN POWER POLES SHALL BE ZINC COATED.

ALL HARDWARE REQUIRED FOR MOUNTING THE SIGNS SHALL BE INCIDENTAL TO THE COST OF INSTALLING THE SIGNS.



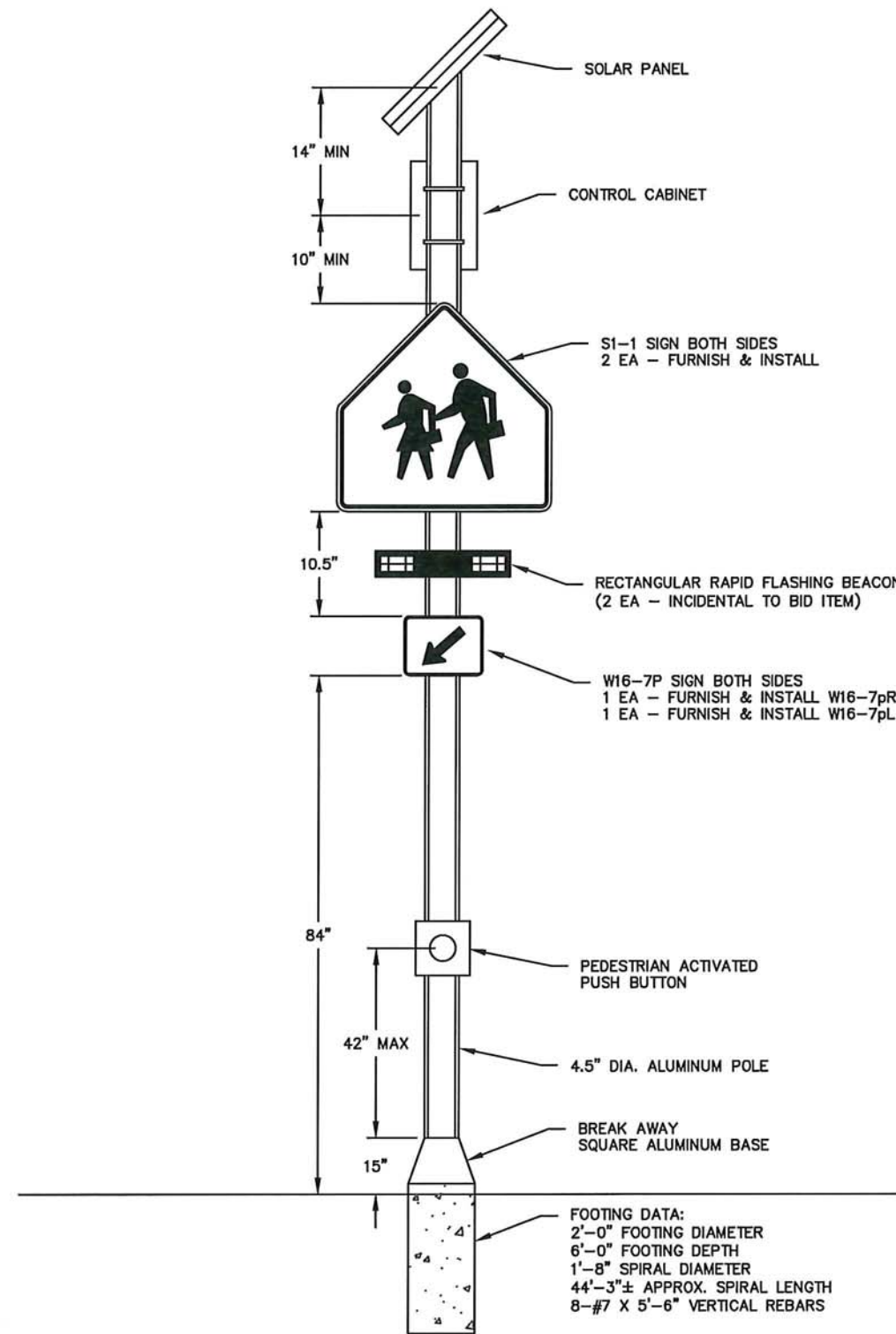
SIGN MOUNTING DETAILS



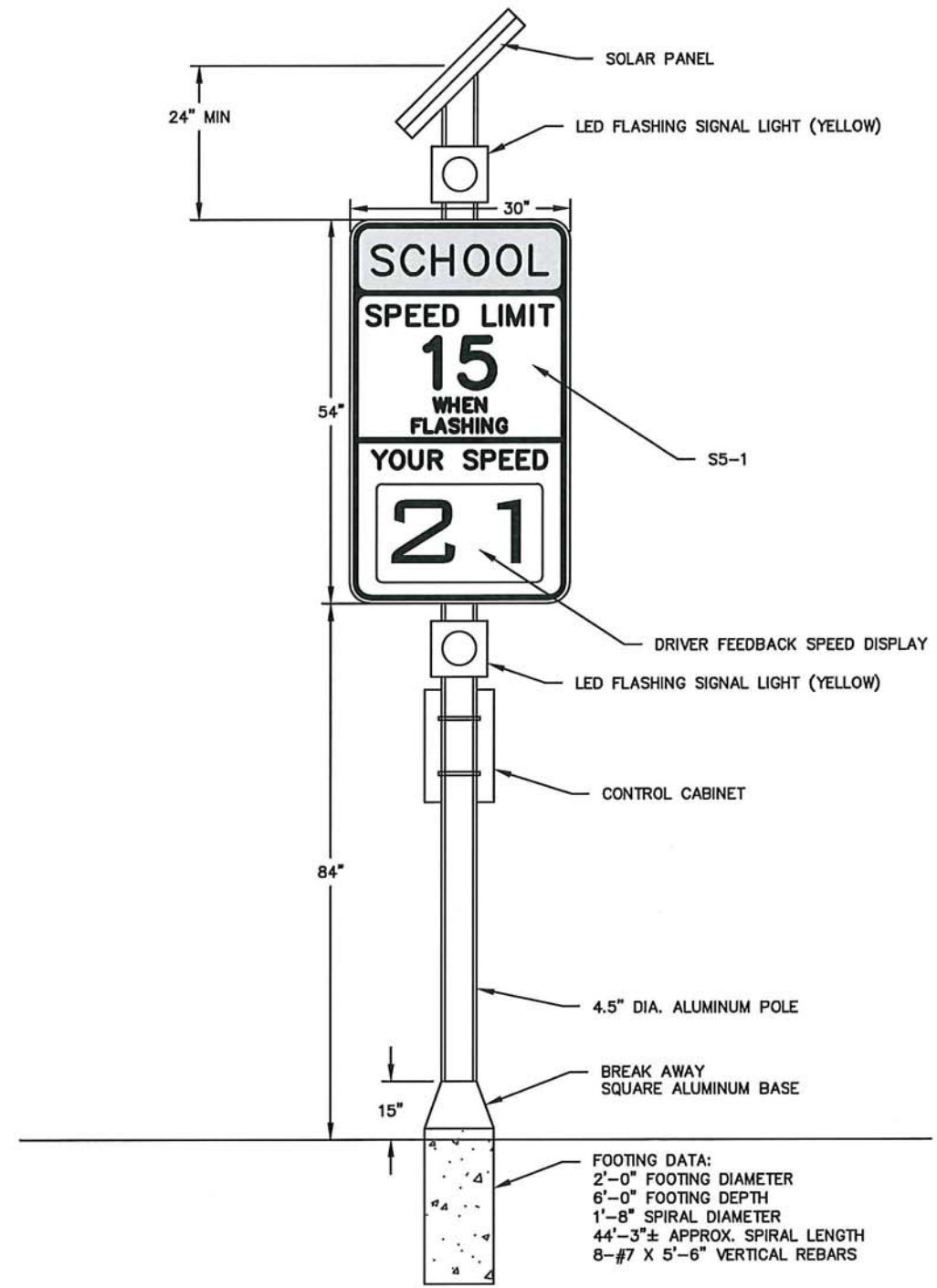
NOTE: ALL R7 & R8 SERIES SIGNS WITH ARROWS SHALL BE INSTALLED AT A 45 DEGREE ANGLE TO THE STREET.

HEIGHTS AND LATERAL LOCATIONS OF SIGNS FOR TYPICAL URBAN INSTALLATION





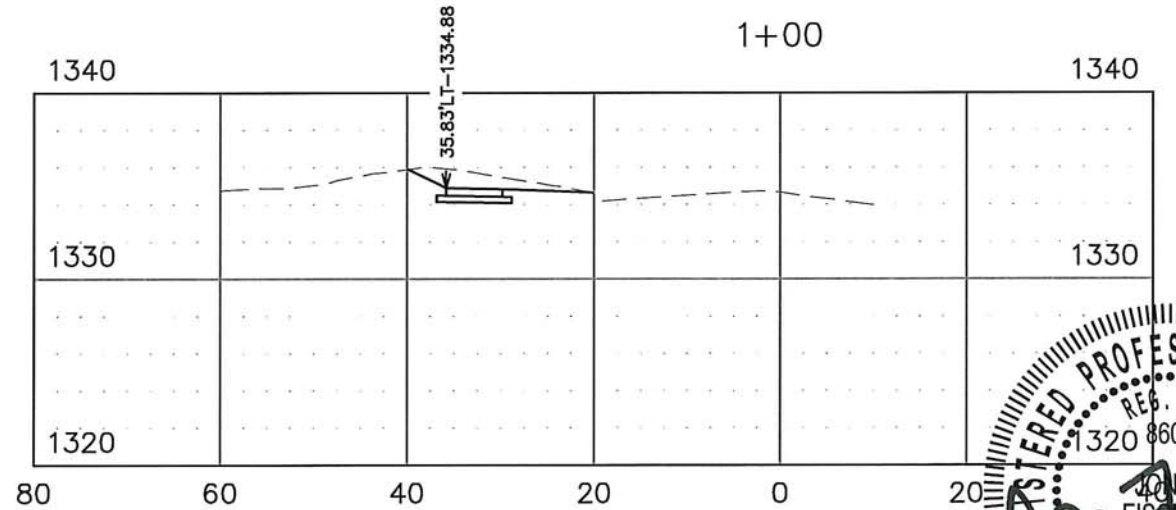
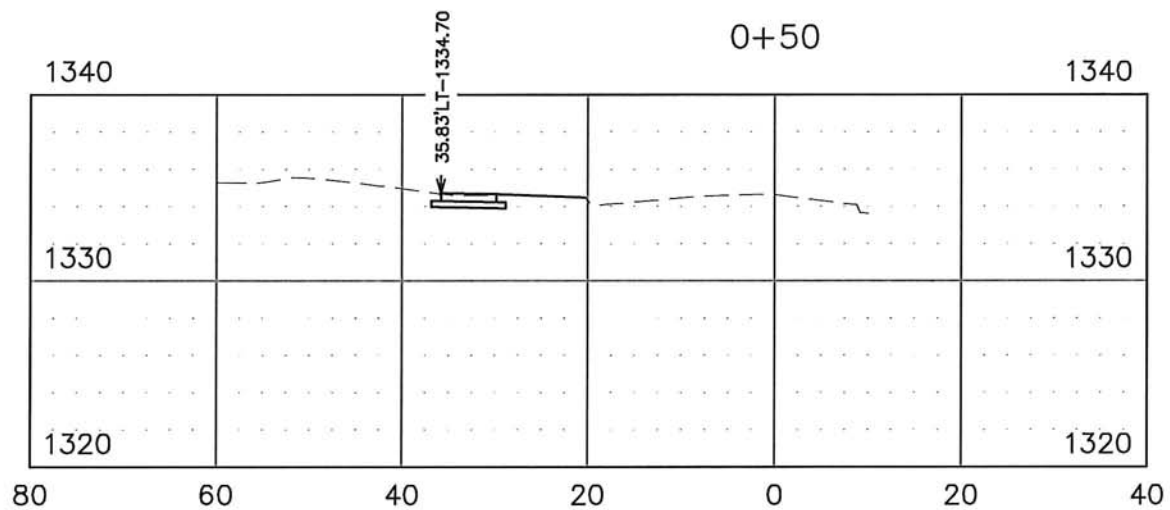
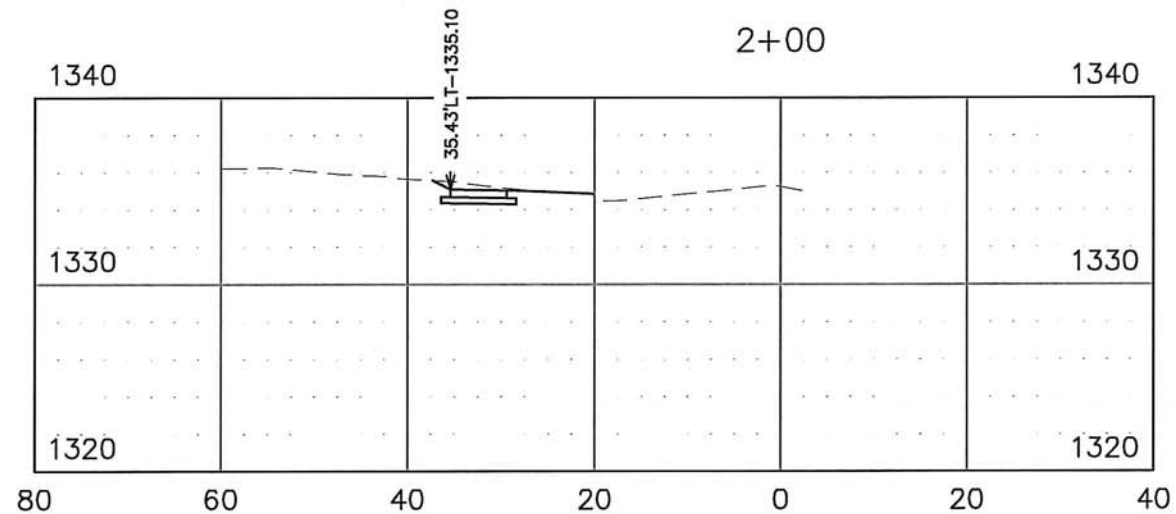
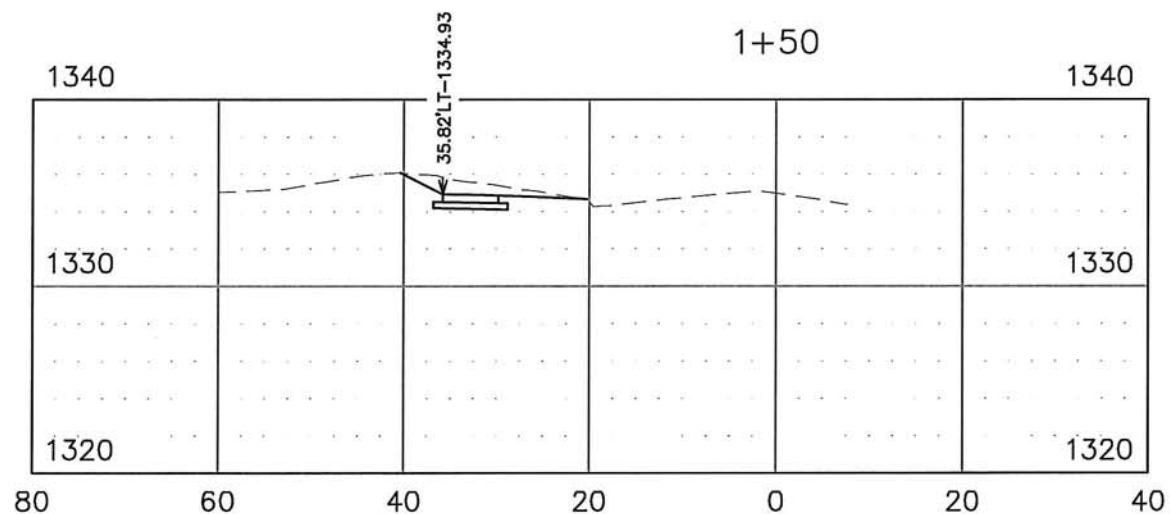
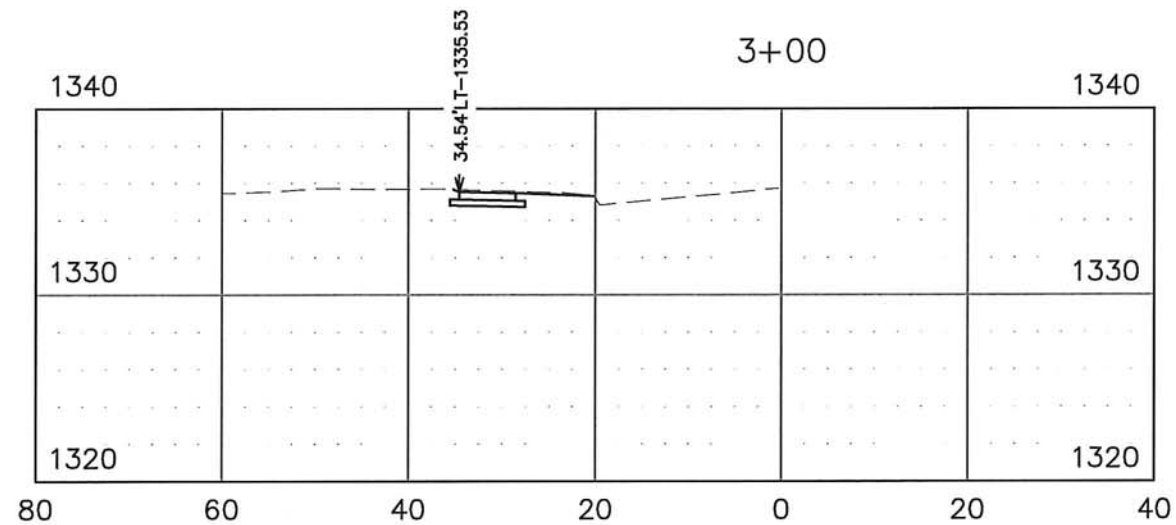
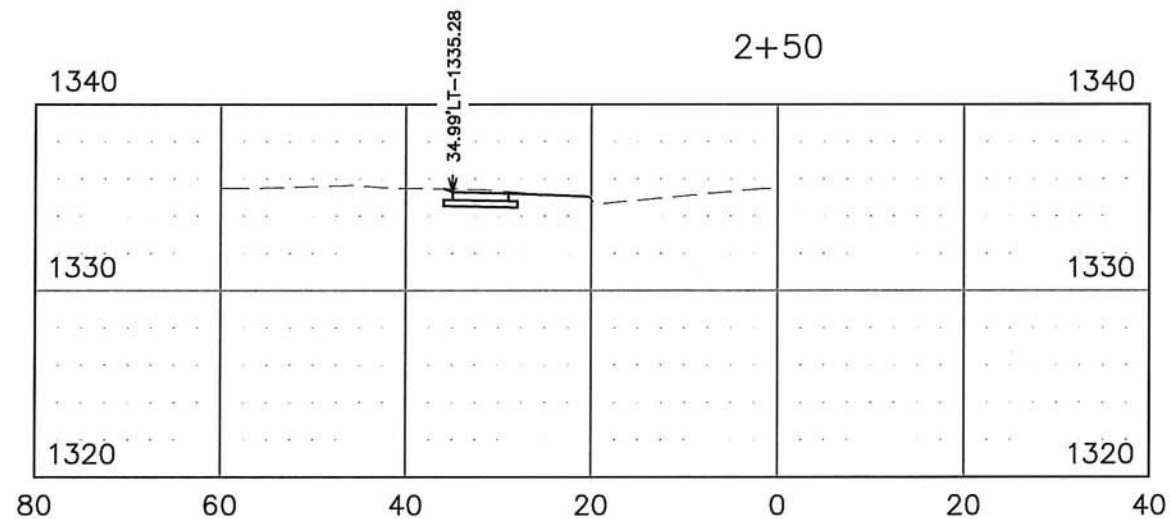
SOLAR POWERED PEDESTRIAN CROSSING FLASHING BEACON



SOLAR POWERED SCHOOL ZONE RADAR/ FLASHING BEACON

**FOURTH AVENUE**

SCALE:  
VERTICAL: 1"=10'  
HORIZONTAL: 1"=20'



SAFE ROUTES TO SCHOOL  
FOURTH AVENUE  
LENNOX, SD

CROSS SECTIONS

DESIGNED BY: JCF	ACAD. FILE: S419 - Cross Sections.dwg
DRAWN BY: JCF	DATE: 1/22/14
CHECKED BY: MMH	BY: DATE
REVISIONS:	BY: DATE

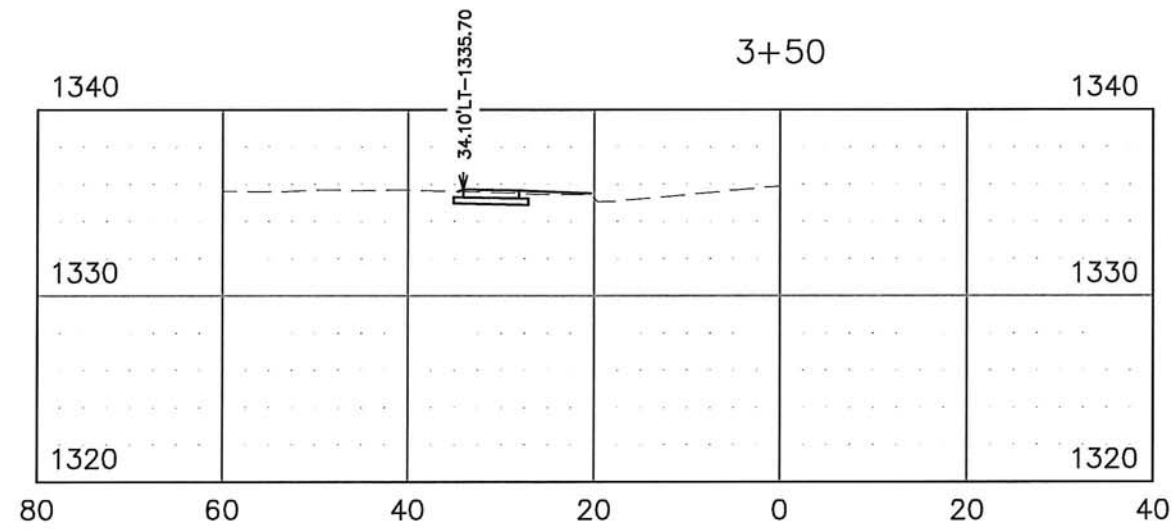
STOCKWELL ENGINEERS  
SIOUX FALLS, SD

SHEET NO.  
X-1

FOURTH AVENUE

SCALE:  
VERTICAL: 1"=10'  
HORIZONTAL: 1"=20'

SAFE ROUTES TO SCHOOL  
FOURTH AVENUE  
LENNOX, SD



CROSS SECTIONS

DESIGNED BY: JDF	ACAD FILE: 3472 - Cross Sections.dwg
CHECKED BY: MAM	DATE: 1/22/14
REVISIONS:	BY: DATE:



STOCKWELL ENGINEERS  
SIOUX FALLS, SD

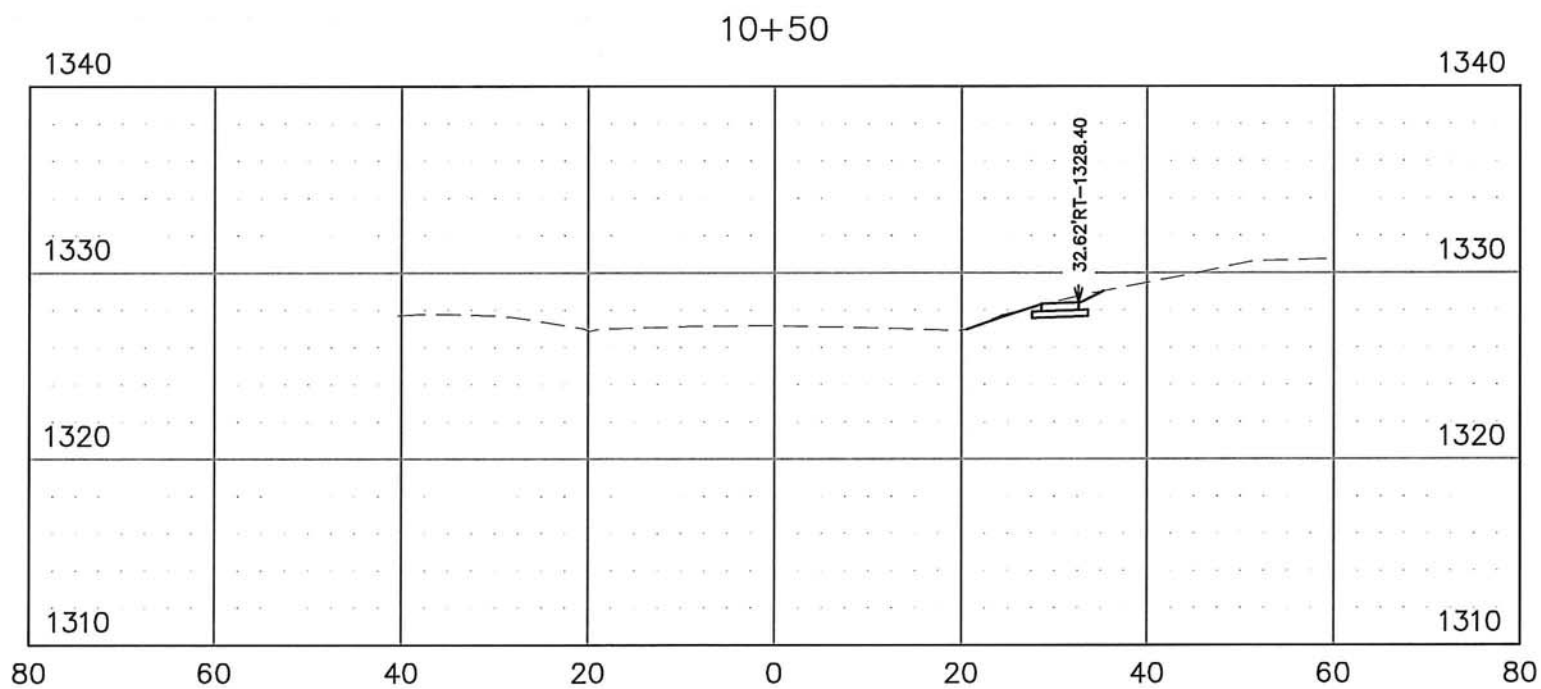
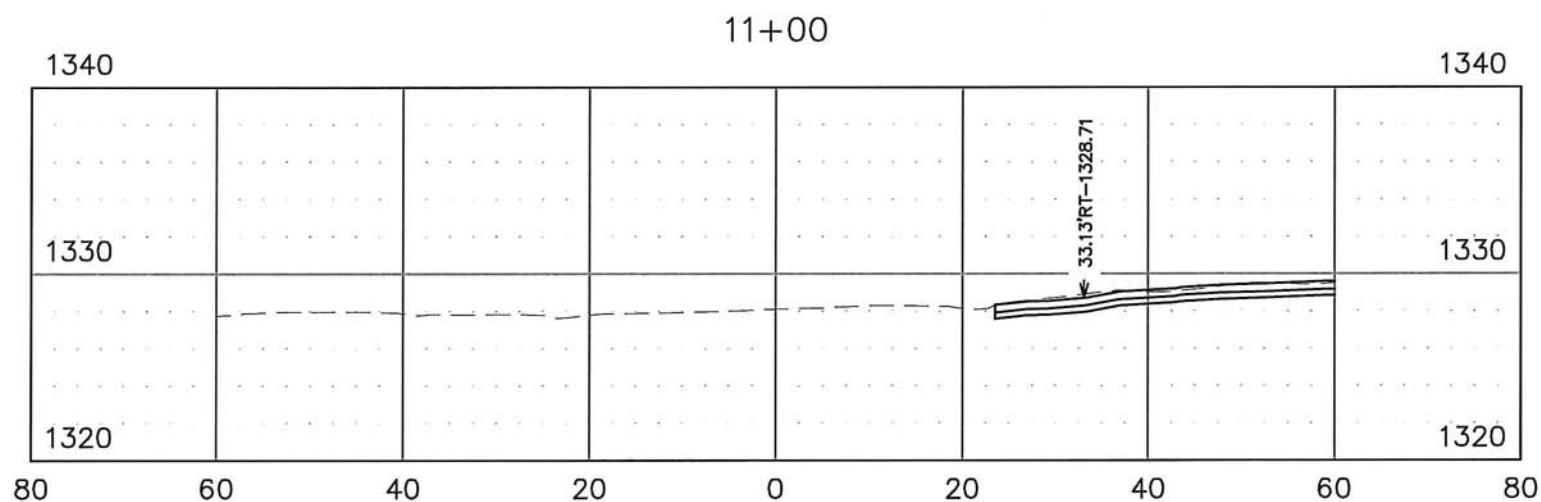
SHEET NO.

X-2

MCKINLEY STREET

SCALE:  
VERTICAL: 1"=10'  
HORIZONTAL: 1"=20'

SAFE ROUTES TO SCHOOL  
MCKINLEY STREET  
LENNOX, SD



CROSS SECTIONS

DESIGNED BY: JDF	ACAD FILE: 3412 - 0203	REVISION: 04/14
CHECKED BY: MMH	DATE: 1/22/14	
REVISIONS:	BY:	DATE:

REGISTERED PROFESSIONAL ENGINEERS  
SIOUX FALLS, SD

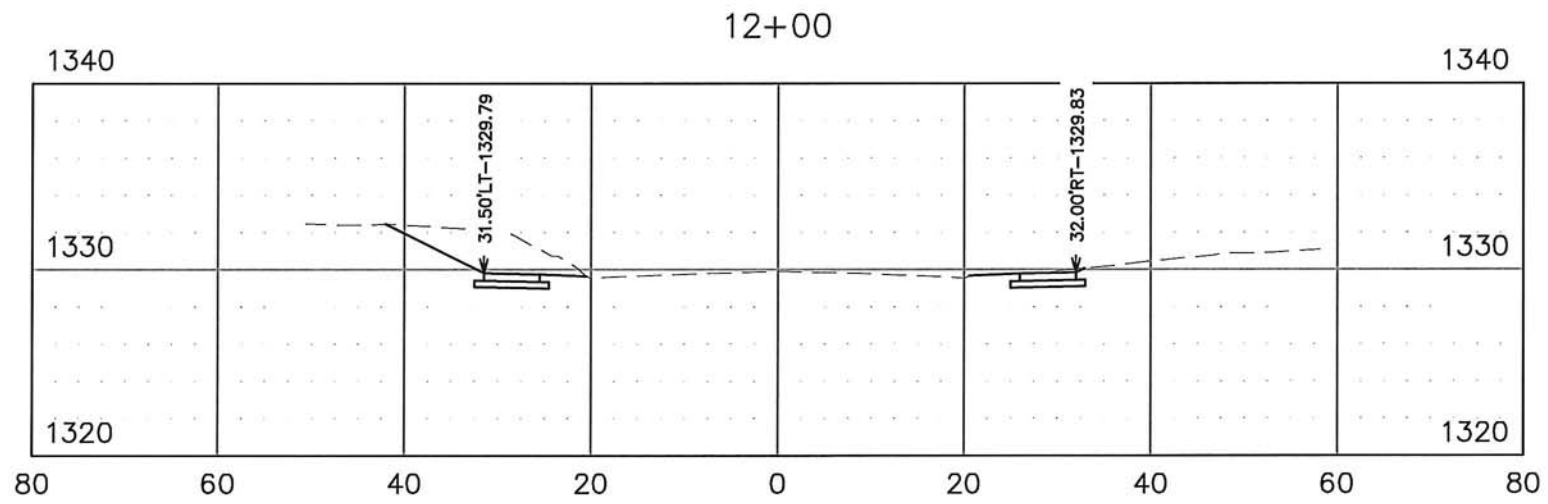
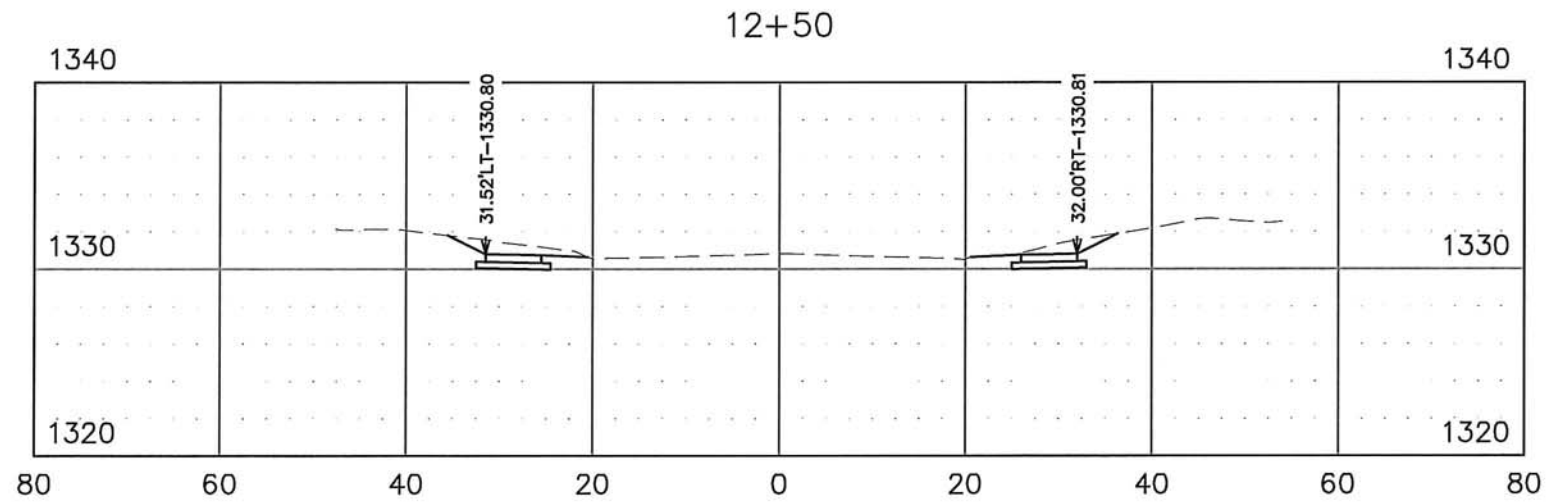
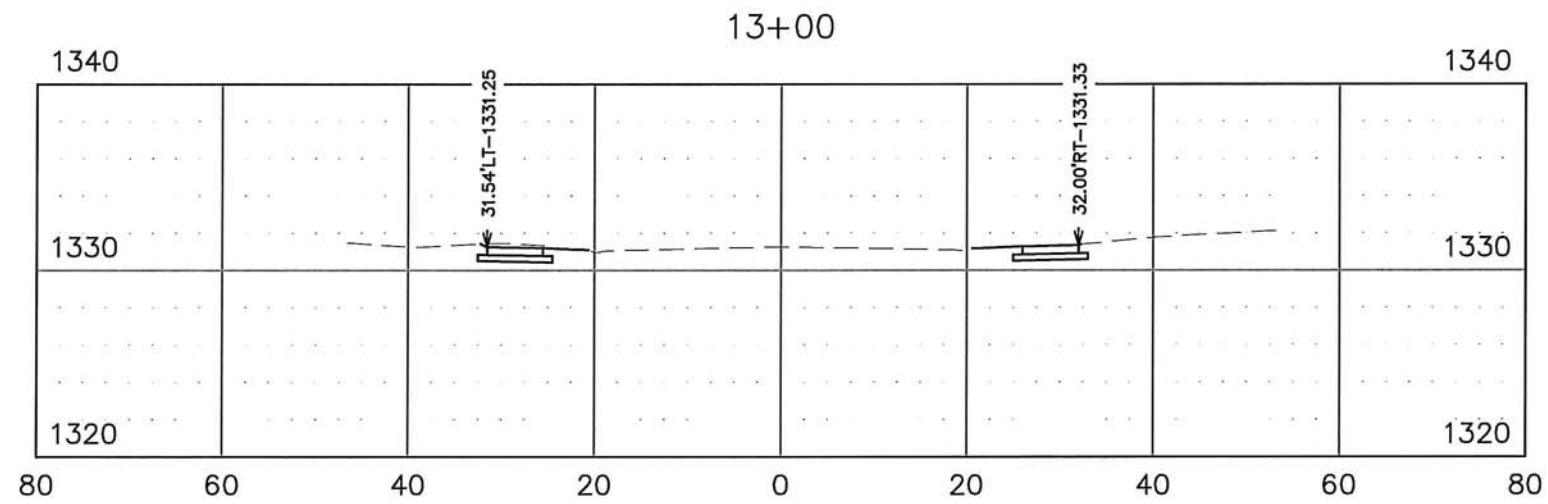


SHEET NO.

X-3

**EIGHTH AVENUE**

SCALE:  
VERTICAL: 1"=10'  
HORIZONTAL: 1"=20'



SAFE ROUTES TO SCHOOL  
EIGHTH AVENUE  
LENNOX, SD

CROSS SECTIONS

DESIGNED BY: JPF	ACAD FILE: 5412 - CROSS SECTIONS.dwg
DRAWN BY: JPF	DATE: 1/22/14
CHECKED BY: MAM	BY: DATE:
REVISIONS:	BY: DATE:

STOCKWELL ENGINEERS  
SIOUX FALLS, SD

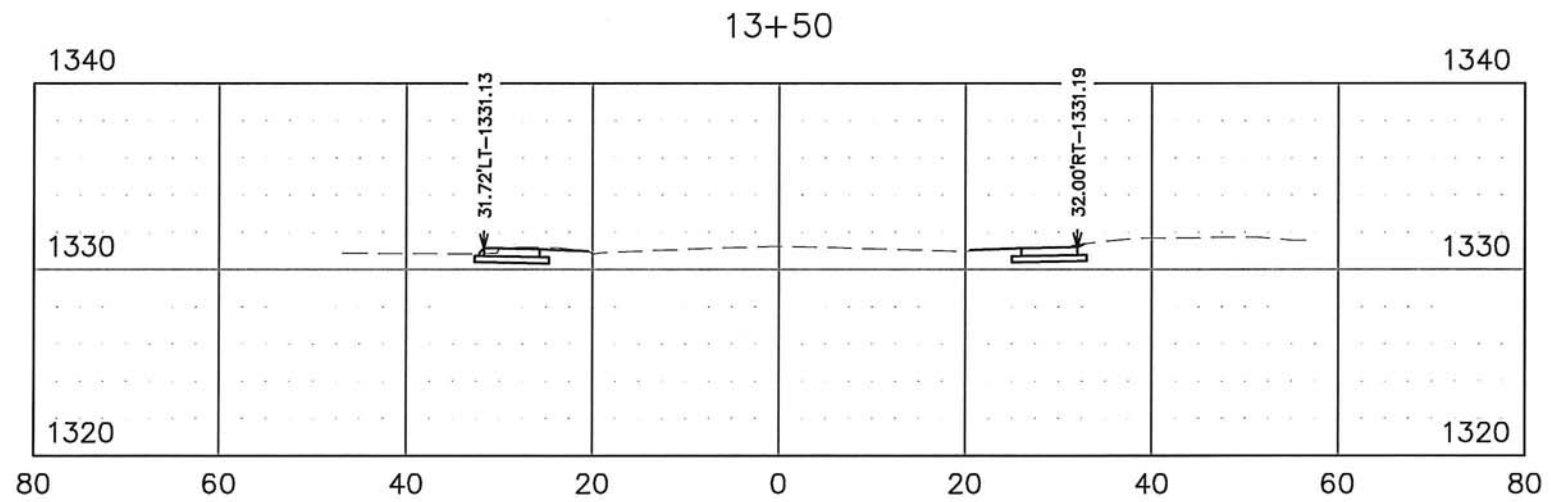
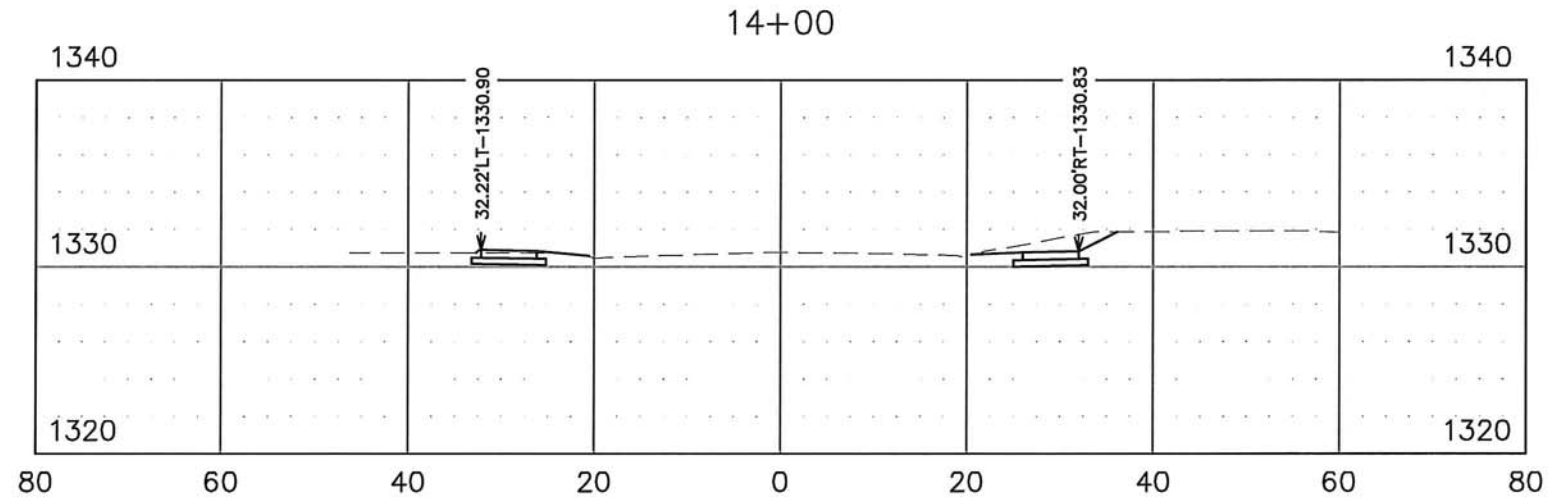
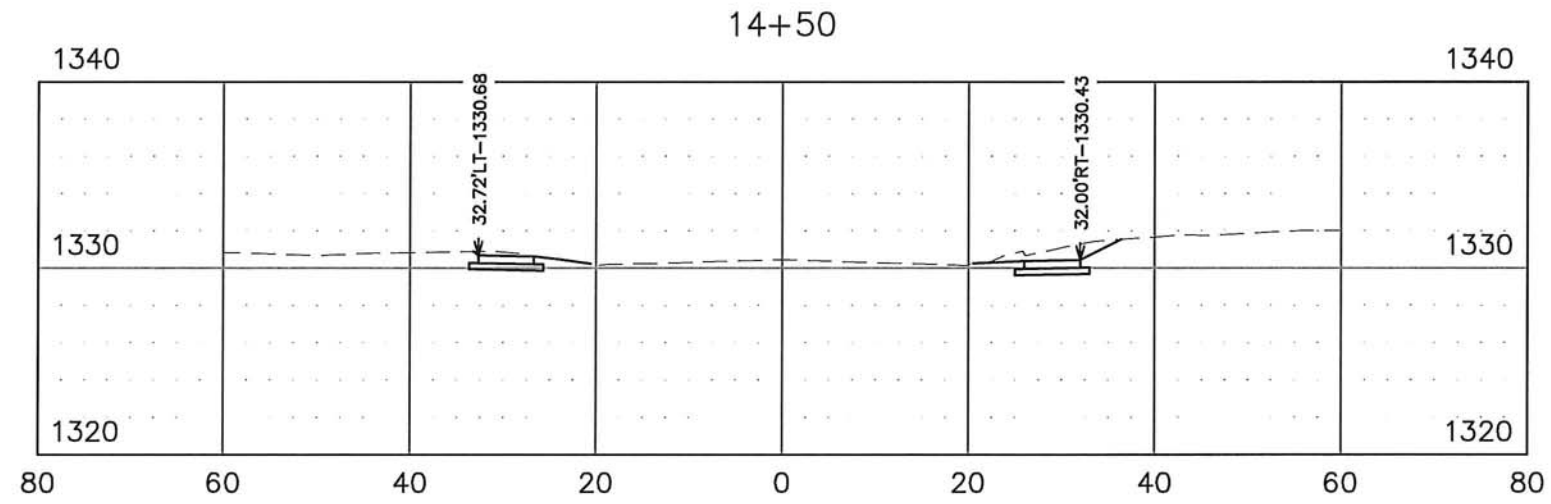


SHEET NO.

X-4

**EIGHTH AVENUE**

SCALE:  
VERTICAL: 1"=10'  
HORIZONTAL: 1"=20'



SAFE ROUTES TO SCHOOL  
EIGHTH AVENUE  
LENNOX, SD

CROSS SECTIONS

DESIGNED BY: JDF	ACAD FILE: 5412 - CROSS SECTIONS.dwg
DRAWN BY: PK	DATE: 1/22/14
CHECKED BY: MAM	BY: DATE:
REVISIONS:	BY: DATE:

STOCKWELL ENGINEERS  
SIOUX FALLS, SD



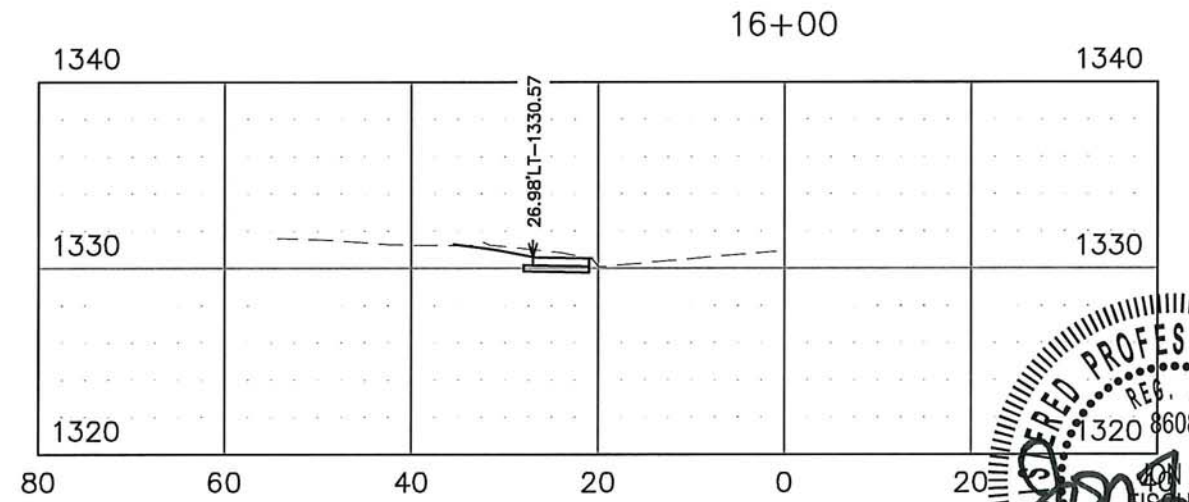
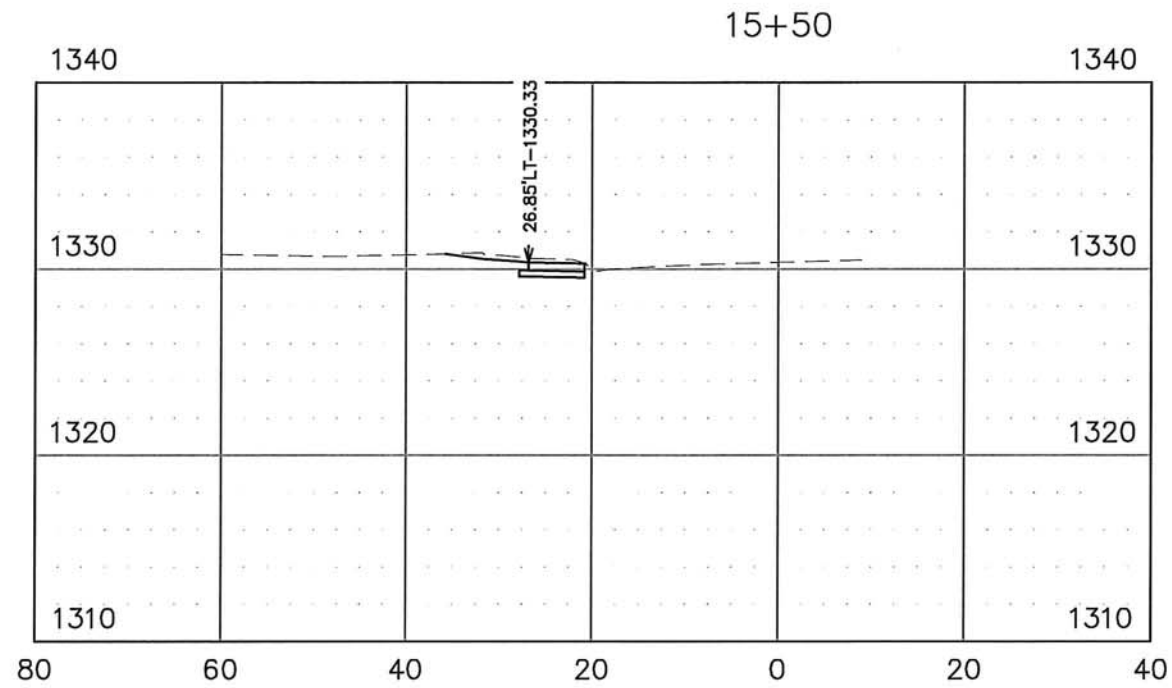
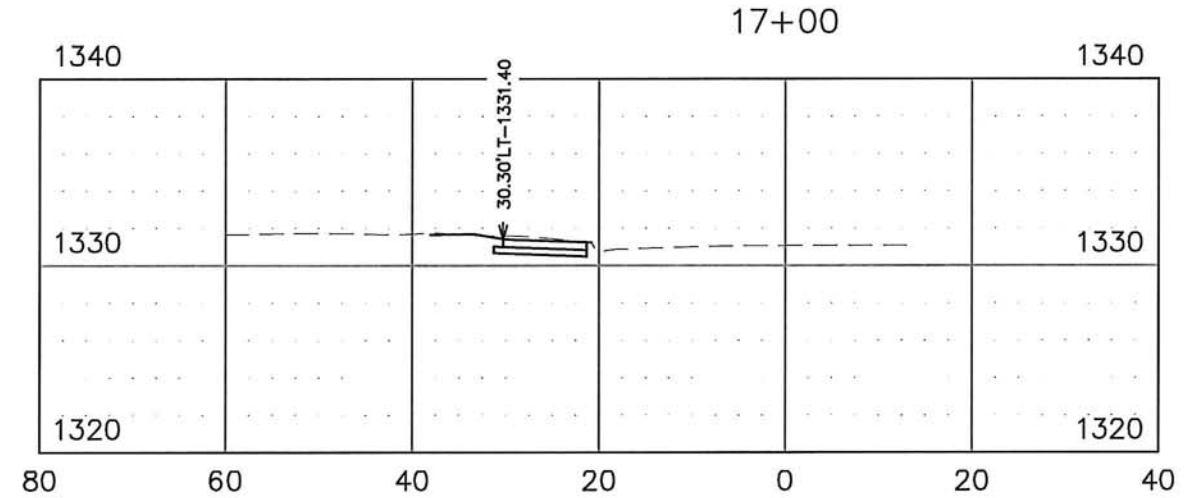
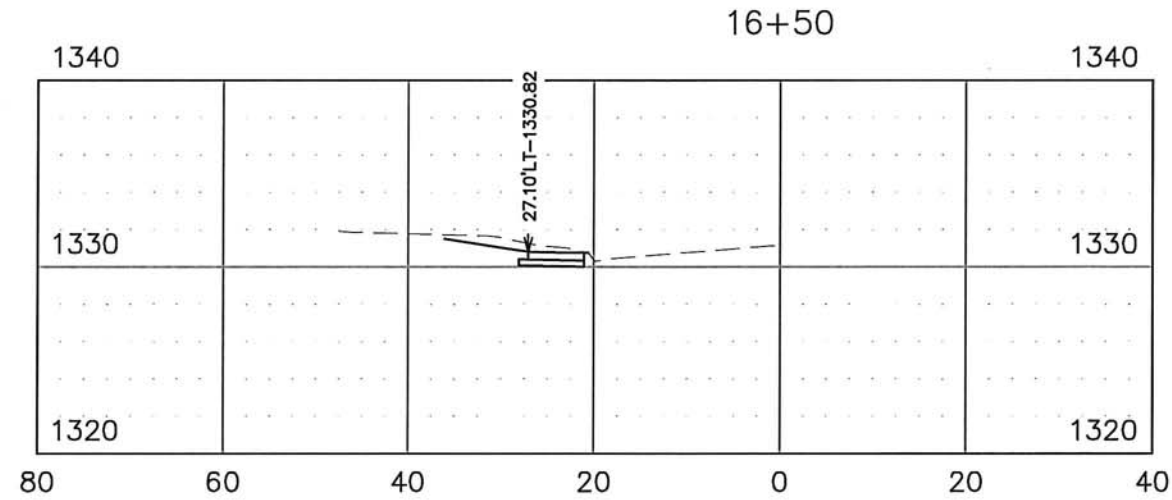
SHEET NO.

X-5

**BLAINE STREET**

SCALE:  
VERTICAL: 1"=10'  
HORIZONTAL: 1"=20'

SAFE ROUTES TO SCHOOL  
BLAINE STREET  
LENNOX, SD



CROSS SECTIONS

DESIGNED BY: JDF	ACAD FILE: 3412 - CROSS SECTIONS.dwg
CHECKED BY: MMH	DATE: 1/22/14
REVISIONS:	BY: DATE:

**STOCKWELL ENGINEERS**  
SIOUX FALLS, SD

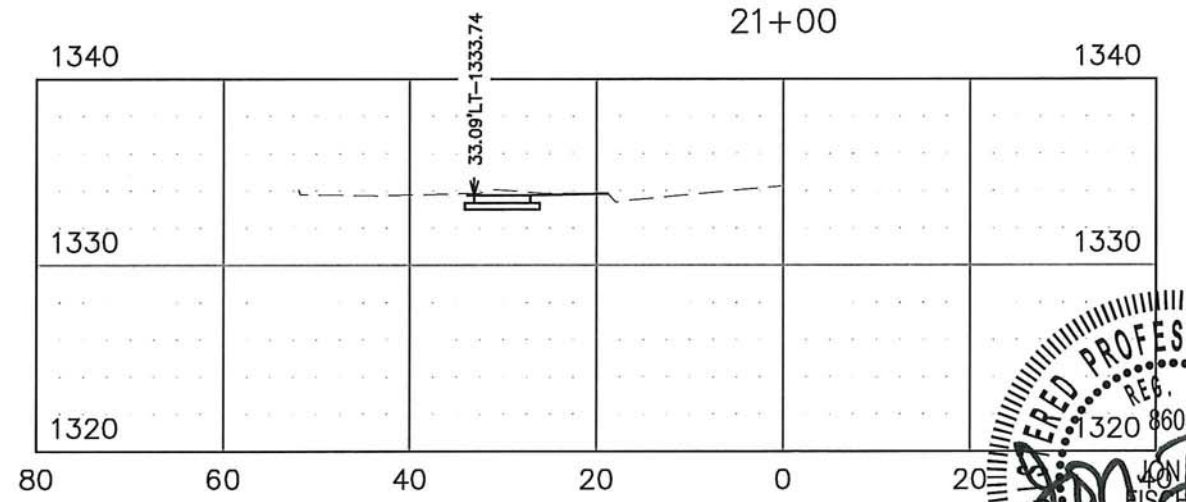
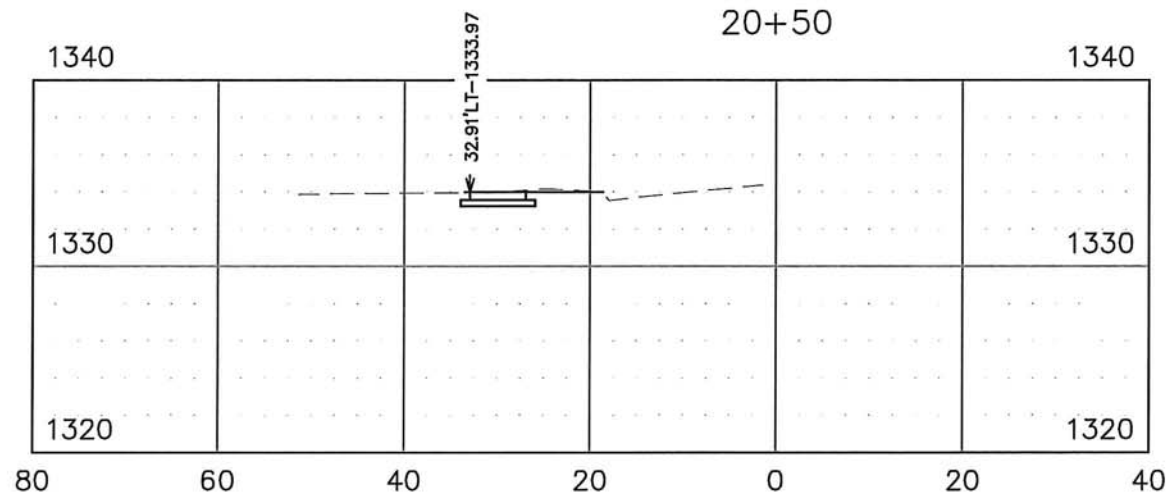
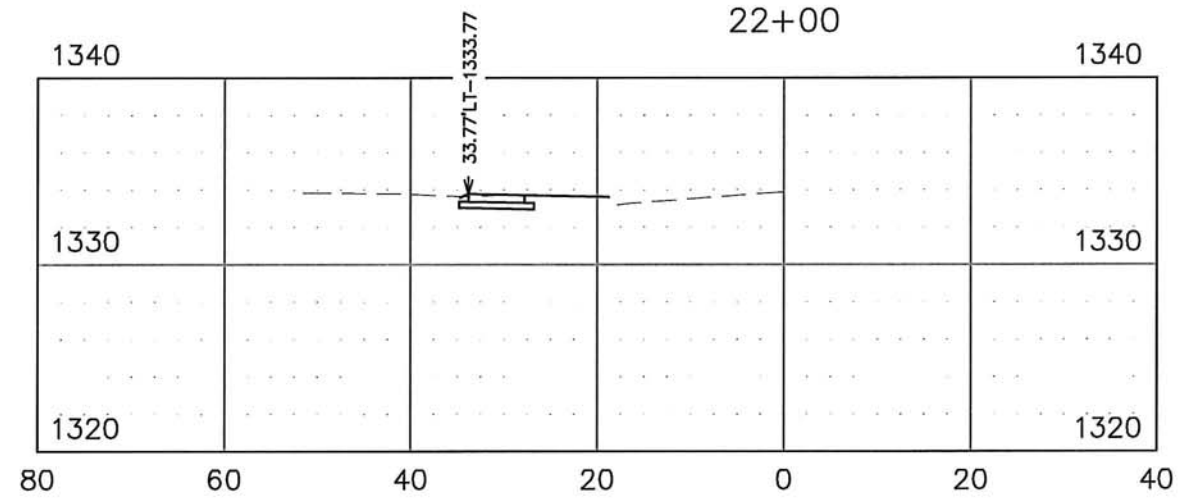
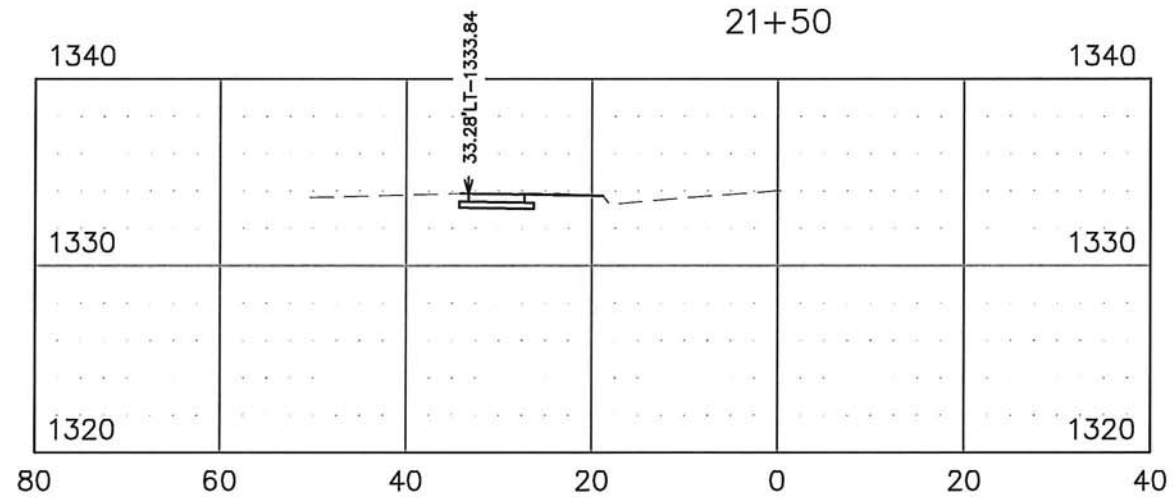
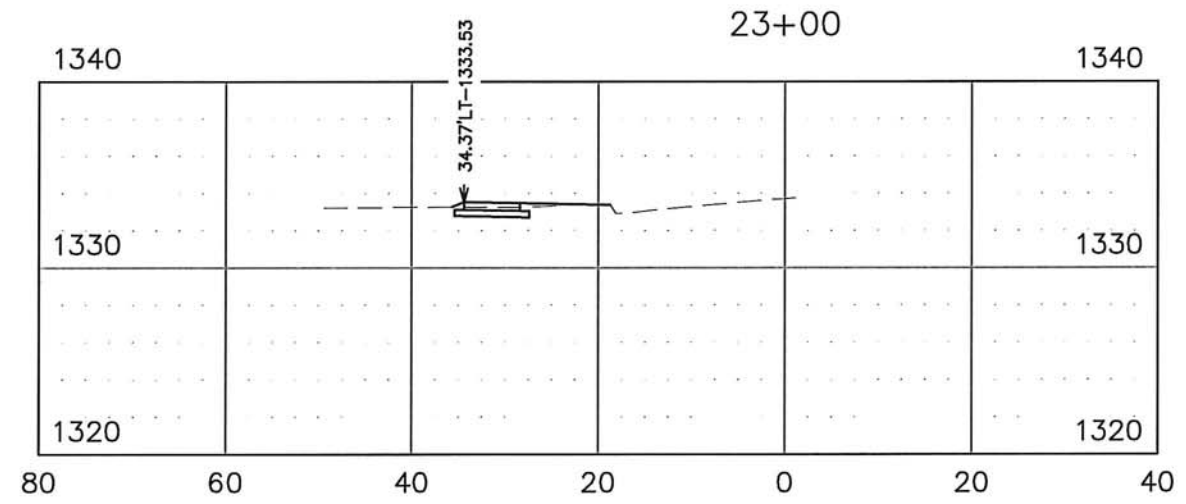
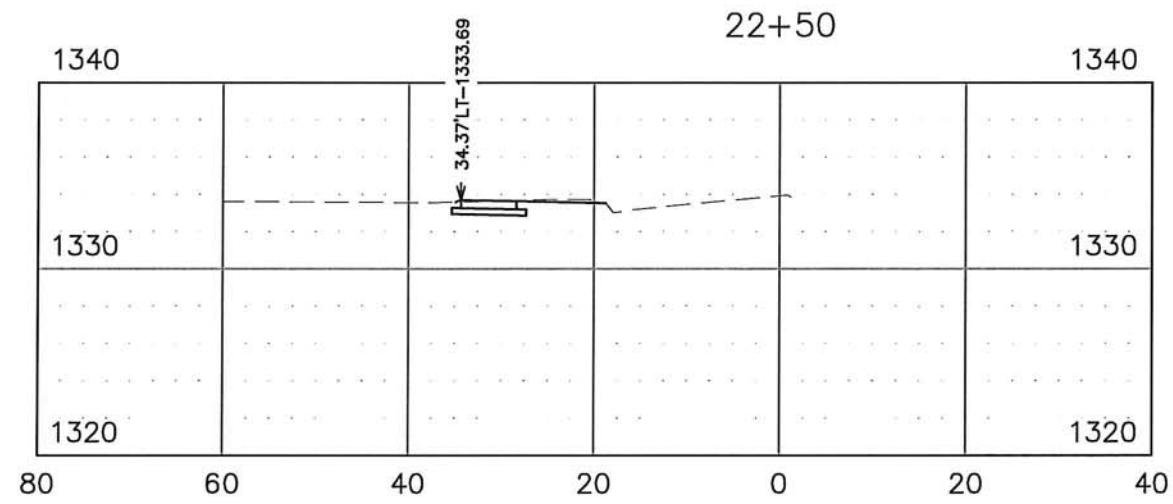
SHEET NO.

X-6



**ELM STREET**

SCALE:  
VERTICAL: 1"=10'  
HORIZONTAL: 1"=20'



SAFE ROUTES TO SCHOOL  
ELM STREET  
LENNOX, SD

CROSS SECTIONS

DESIGNED BY: JDF	ACAD FILE: S412 - Cross Sections.dwg
DRAWN BY: JDF	DATE: 1/22/14
REVISIONS:	BY: DATE

STOCKWELL ENGINEERS  
SIOUX FALLS, SD

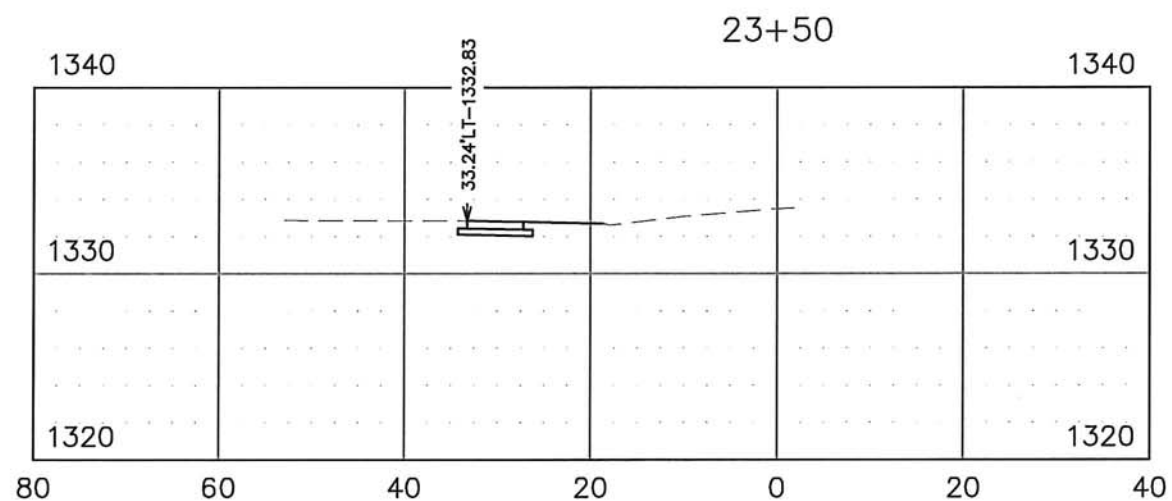
SHEET NO.

X-7

ELM STREET

SCALE:  
VERTICAL: 1"=10'  
HORIZONTAL: 1"=20'

SAFE ROUTES TO SCHOOL  
ELM STREET  
LENNOX, SD



CROSS SECTIONS  
DESIGNED BY: JDF  
CHECKED BY: MMW  
REVISIONS:  
ACAD FILE: 5412 - CROSS SECTIONS.dwg  
DATE: 1/22/14  
BY: DATE  
BY: DATE

STOCKWELL ENGINEERS  
SIOUX FALLS, SD



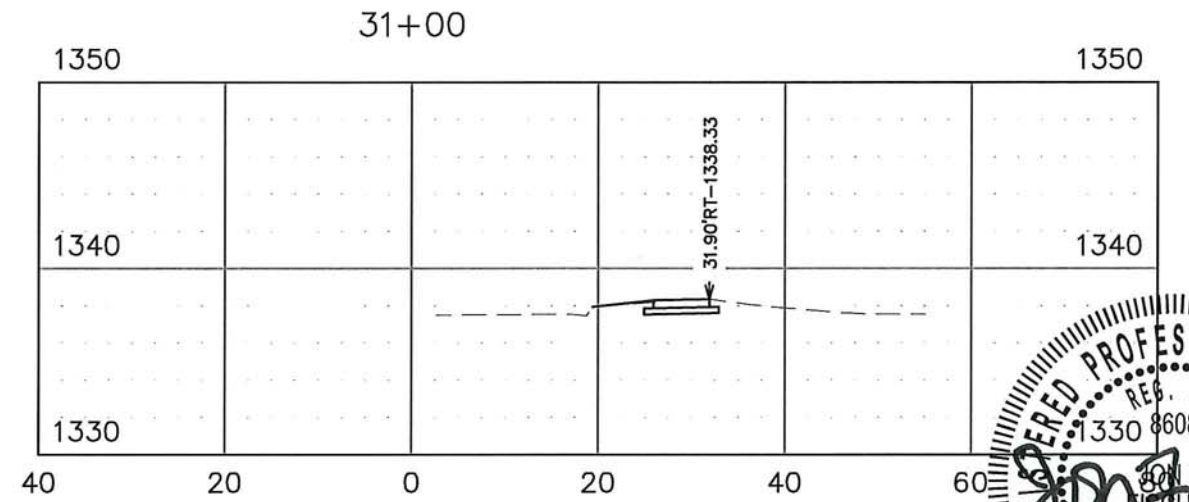
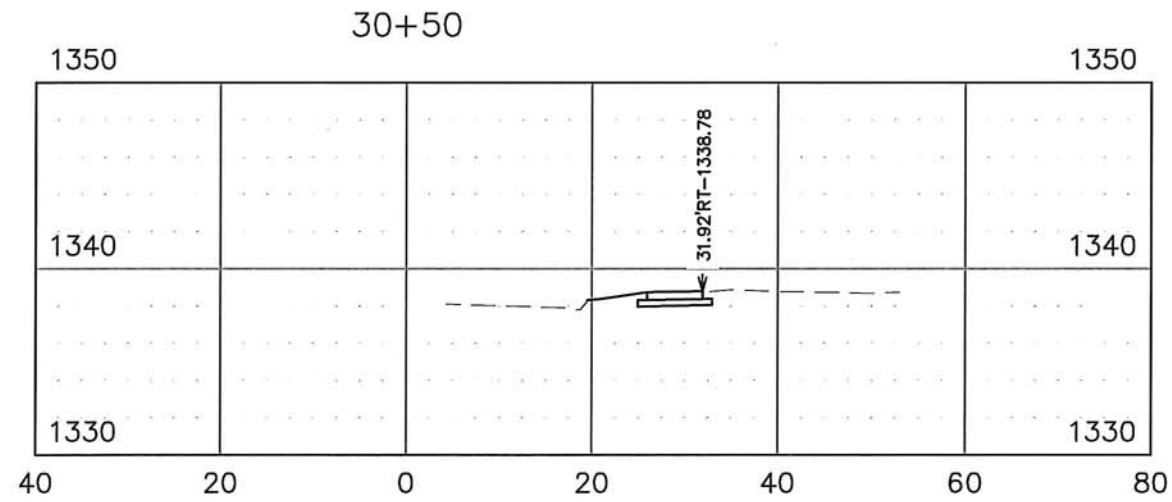
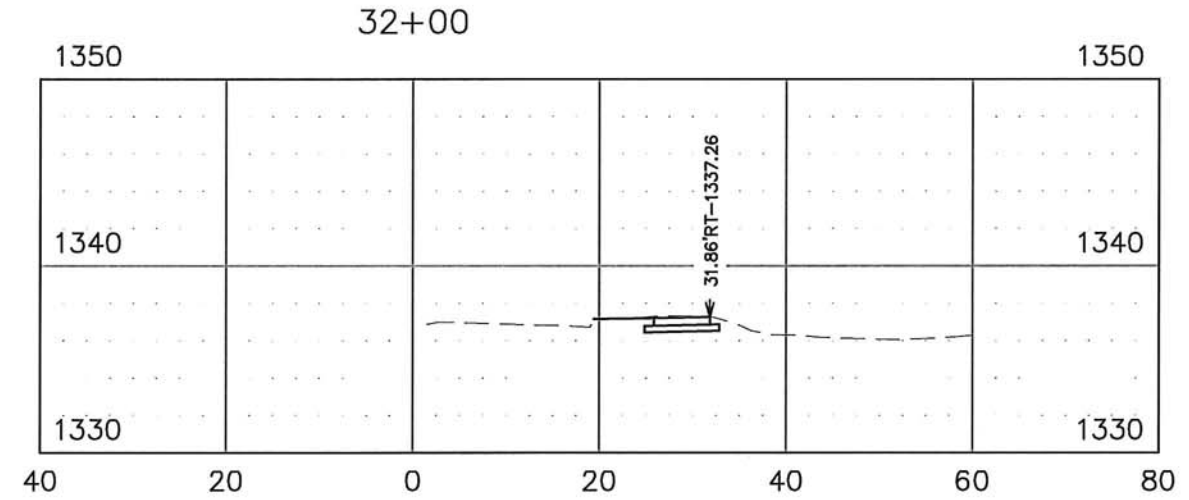
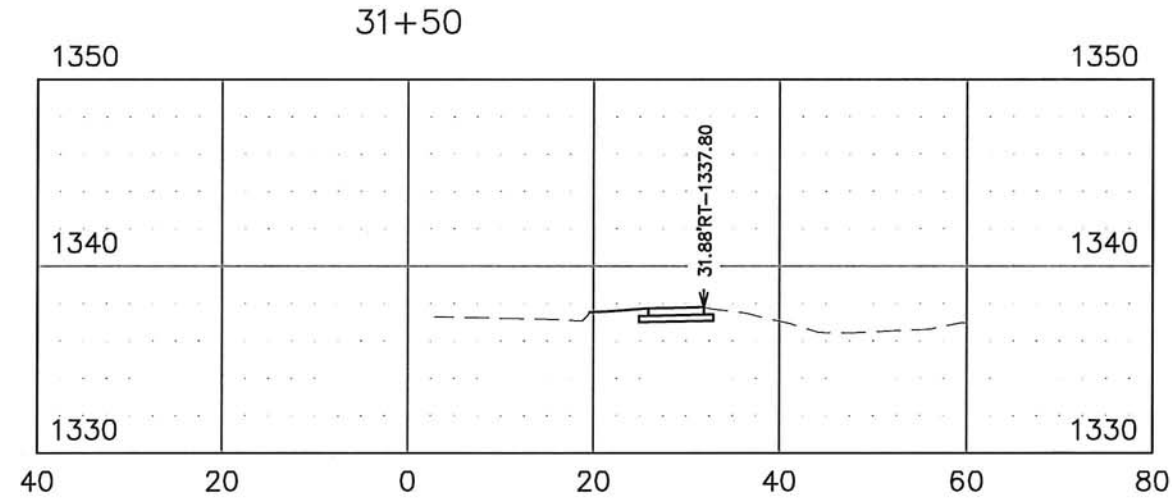
SHEET NO.

X-8

**MAIN STREET**

SCALE:  
VERTICAL: 1"=10'  
HORIZONTAL: 1"=20'

SAFE ROUTES TO SCHOOL  
MAIN STREET  
LENNOX, SD



CROSS SECTIONS

DESIGNED BY: JDF	ACAD FILE: SATZ - CROSS	DATE: 1/22/14
DRAWN BY: MMH	BY: MMH	DATE: 1/22/14
REVISIONS:	BY:	DATE:

**STOCKWELL ENGINEERS**  
SIOUX FALLS, SD

SHEET NO.

X-9