

| 15 | WALL PLAN & PROFILE ALTERNATE A1 | 29 | DETAIL SHEE |
|------|--------------------------------------------|----|--------------|
| 16 W | WALL SECTIONS ALT A1 | 30 | DETAIL SHEE |
| 17 | WALL DIAN & DROFILE | 31 | DETAIL SHEE |
| 17 | ALTERNATE A2 | 32 | DETAIL SHEE |
| 18 | WALL SECTIONS, ALT A2 | 33 | DETAIL SHEE |
| 19 | WALL DETAILS | 34 | DETAIL SHEE |
| 20 | GRADING PLAN | 35 | TYPICAL SEC |
| 01 | SIA 37+00 I0 40+70 | 36 | TYPICAL SEC |
| 21 | STA $48+75$ TO $60+25$ | 37 | TRAFFIC CON |
| 22 | GRINDING PLAN | 38 | TRAFFIC CON |
| | STA 37+00 TO 48+75 | 39 | LANDSCAPE |
| 23 | GRINDING PLAN STA 48+75 TO 60+25 | 40 | LANDSCAPE |
| 24 | 4th AVE & MAIN ST TRAFFIC | 41 | LANDSCAPE |
| 05 | LUUPS | 42 | UTILITY TREP |
| 25 | EROSION CONTROL PLAN DETAILS | 43 | UTILITY TREN |
| 26 | EROSION CONTROL PLAN STA 37+00 TO 48+50 | 44 | TEMPORARY |
| 27 | EROSION CONTROL PLAN STA 48+50 TO 60+25 | | |
| 28 | CHANNELIZATION PLAN STA 34+00 TO 60+25 | | |

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<u>LEGEND</u>



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MAIN STREET STREET IMPROVEMENTS LEGEND

| JOB# / DWG | | DATE |
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| 08018 | 08018_SP1.AB | 7-21-10 |
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| | JOB# / DWG | | DATE |
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| MAIN STREET | 08018 | 08018_SP1 | 7-21-10 |
| EXISTING CONDITIONS | SCALE | | SHEET |
| STA 58+00 TO 60+25 | н:1"=20' | ' v:1"=2' | 7 |
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| MAIN STREET | 08018 08018_SP1.AB | 7-21-10 |
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| STA 58+00 TO 60+25 | H:1"=20' V:1"=2' | 14 |



| | JOB# / DWG | | DATE |
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| MAIN STREET | 08018 | 08018_SP1.AB | 8-5-10 |
| ADDENDUM 1 | SCALE | | SHEET |
| WALL SECTIONS, ALT A1 | H∶n∕a | v:n/a | 16 |

| PROPOSED SIDEWALK PROPOSED SIDEWALK V V V V V V V V V V V V V V V V V V V | PROP RD | PONCH WASHING B 8378 STERED VAL ENGINE VAL ENGINE II/29/16 |
|---------------------------------------------------------------------------------|----------------------------------|---------------------------------------------------------------------------------|
| MAIN STREET | јов# / dwg 08018 08018_SP1.AB | DATE 8-5-10 |
| ADDENDUM 1 | SCALE | SHEET |

< 30"

- RETAINING WALL, FOUNDATION,

PROPOSED CURB & GUTTER

AND BACKFILL PER STRUCTURAL DETAILS

> 30" PROPOSED CURB-PROPOSED SIDEWALK PROP RD ĨŔĸŶĬŔĸĨĬŔĸĨĬŔĸŢĨŔŎĸŢĬŔŎĸŢĬŔŎĿĬŔŎĿĬŔŎ ′_№·▽ -- RETAINING WALL, FOUNDATION, AND BACKFILL PER STRUCTURAL DETAILS ALT. A1 RETAINING WALL WEST (STA: 0+90 - 1+90)

| | JOB# / DWG | DATE |
|------------------------------|--------------------|---------|
| MAIN STREET | 08018 08018_SP1.AB | 7-21-10 |
| STREET IMPROVEMENTS | SCALE | SHEET |
| ALL PLAN AND PROFILE, ALT A2 | H:1"=20' V:1"=2' | 17 |

| | JOB# / DWG | | DATE |
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| MAIN STREET | 08018 | 08018_SP1.AB | 7-21-10 |
| STREET IMPROVEMENTS | SCALE | | SHEET |
| WALL SECTIONS, ALT A2 | H∶n⁄a | v:n∕a | 18 |

1 TYPICAL RETAINING WALL 6'-0" HEIGHT

NOTE: FOOTING SHALL BE PLACED ON A 4:1 SLOPE MAXIMUM OTHERWISE NOTIFY E.O.R. FOR STEP FOOTING DETAIL

NOTES:
1. TABULATED VALUES ARE BASED ON GRADE 60 UNCOATED REINFORCING BARS AND 4000 PSI NORMAL WEIGHT CONCRETE. LENGTHS ARE IN INCHES.
2. TENSION DEVELOPMENT LENGTH AND LAP SPLICE LENGTHS ARE CALCULATED PER ACI 318-02
3. FOR 3000 PSI AND 5000 PSI CONCRETE, MULTIPLY THE TABULATED VALUES BY 1.16 AND 0.90 RESPECTIVELY.
4. BAR c. - c. SPACING MUST BE GREATER THAN TWICE THE BAR DIAMETER AND COVER GREATER THAN ONE BAR DIAMETER.
5. "TOP" BARS ARE DEFINED AS HORIZONTAL BARS WITH MORE THAN 12 INCHES OF FRESH CONCRETE CAST BELOW THE BARS.
6. FOR LIGHTWEIGHT AGGREGATE CONCRETE, MULTIPLY THE TABULATED VALUES BY 1.3.
7. FOR EPOXY COATED REBAR, MULTIPLY THE TABULATED VALUES BY 1.5.
8. FOR #11 AND LARGER BARS, MECHANICAL ANCHORAGE AND SPLICES SHALL BE REQUIRED, AND SHALL DEVELOP 1.25 Fy, MIN.
9. WELDED WIRE FABRIC SHALL LAP TWO CROSS WIRES.

TYP. BARRIER WALL CORNER 3 REINFORCING DETAIL1

DOUBLE CURTAIN @ 45 DEG CORNER

─ N.T.S.

TYPICAL PIPE AND CONDUIT PENETRATIONS THRU. FOOTING

N.T.S.

REINFORCING THAT IS INTERRUPTED BY THE OPENING SHALL BE REPLACED BY ADDITIONAL PENEOPONIC ALL OWNED

BY ADDITIONAL REINFORCING, ALLOWING FOR 1/2 THE REINFORCING TO BE LOCATED

ON EA SIDE OF THE OPENING AT PIPE PENETRATIONS

STRUCTURAL NOTES

GENERAL -Designed in accordance with the 2006 International Building Code (IBC)

Design Loads:

Backfill soil data Soil Unit Wight = 115 pcf

Ko = .5 Surcharge load applied as 35% of 150 psf as a lateral pressure on back of retaining wall Allowable coefficient of base friction = 0.25

, monuple openicient of pase Inclidit = 0.20

Contractor shall ensure high standards of workmanship throughout, with strict adherence to the contract documents.
Kingworks is responsible only for the design of the primary structural system as shown in the contract documents. Design of all secondary structure or non-structural elements are by others.
Notify the Engineer immediately of any discrepancies between these notes, the contract drawings, the specification, or the

governing code. - Verify all existing conditions; verify all dimensions in the field; verify mechanical and electrical openings for size, location and number; notify the Engineer of any discrepancies or conditions not included in or contrary to the contract documents

prior to shop drawing submittal or construction. - Coordinate the structural drawings with drawings from all other disciplines (including but not limited to Civil, Mechanical, and Electrical).

- The structure shown in these drawings is designed to be stable and to resist the loads above only in a fully completed form. Contractor shall ensure that the structure is adequately braced and shored during construction for all temporary loads until all elements are in place, and shall ensure that temporary loadings do not exceed the allowable capacity of any structural elements both before and after these elements are in place.

Do not scale drawings. See Civil drawings for dimensions, and notify the Engineer of any discrepancies.
 Any holes or other alterations to the structure which are not specifically detailed on the contract drawings shall be submitted to the Engineer for approval.

- These drawings, and all designs shown within these drawings, are copyrighted by Kingworks Consulting Engineers. Duplication is not permitted without written permission. The designs shown herein are intended for this project only and may not be used on any other project or for any other purpose.

FOUNDATIONS AND SUBGRADE

- Soil Allowable Bearing Pressure: 2500 PSF (no increase when subjected to wind or seismic loadings). -GeoTest geotechnical report dated March 31, 2010 for subgrade preparation, backfill, compaction. All provisions of the

geotechnical report shall be enacted by the Contractor. -Verify sizes, slopes and locations of tunnels, electrical cells, pits, pipes, floor drains, trenches and floor recesses with

architectural, mechanical and electrical contractors. - Pipes are not to pass through or beneath footings except as shown in specific details.

All footings shall be centered below columns and walls, unless dimensioned otherwise.

REINFORCED CONCRETE

| | fc | w/cm | COARSEAGG. | FLY ASH | SLAG | TOTAL FLY ASH + SL | .AG |
|----------|-------|-------|------------|---------|-------------|--------------------|-----|
| | (psi) | (max) | (max) | (% s | ubstituted, | by mass) | |
| Footings | 4000 | 0.42 | 1-1/2" | 0-25% | 20-40% | 45% MAX. | |
| Walls | 4000 | 0.42 | 1-1/2" | 0-25% | 20-45% | 45% MAX. | |

- Fly Ash: Class F per ASTM C618. - Slag: GGBF Slag per ASTM C989, Grade 100 minimum.

- Concrete exposed to weather shall have air entrainment as follows:

COARSE AGG. AIR CONTENT (+/-1.5%)

3/4"- 1" 6.0%

- Reinforcing Steel: ASTM A615, Grade 60 typical

6 STRUCTURAL NOTES

N.T.S.

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NOTE: FOOTING SHALL BE PLACED ON A 4:1 SLOPE MAXIMUM OTHERWISE NOTIFY E.O.R. FOR STEP FOOTING DETAIL

 $(5) \frac{4'-6''}{N.T.S.}$

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|-------------------|---|------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| GRAPHIC SCALE | | | |
| | | | |
| (IN FEET) | | | |
| 1 inch = 20 ft. | Ŷ | | |
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| | | CONSTRUCTION NOTES: | |
| | | $\sqrt{1}$ install type 3a induction loop vehicle detector. Use wisdot standard plans J-8c | |
| | | \sim and j-8d. $\sqrt{2}$ Route new loop stubout conduit to exiting junction box or use exiting conduit if | |
| | | UNDAMAGED. SPLICE NEW LOOP WIRES TOI EXISTING LEAD-IN CABLES INSIDE JUNCTION BOX. | |
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| | | Lynden, Washington 98264 Fax (360) | 354-040 |

| • | WIRING SCHEDULE | | | | | | | | |
|---|-----------------|---------|-------------------|--------|--|--|--|--|--|
| | CONDUIT | CONDUIT | NEW CONDUCTORS | | | | | | |
| | | SIZE | #12 TWISTED PAIRS | NOTES: | | | | | |

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EXISTING CONDUITS MAY BE USED IF UNDAMAGED

GENERAL NOTES

- 1. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. 2. ALL CUT AND FILL SLOPES SHALL BE SEEDED AND FERTILIZED FOR EROSION CONTROL.
- CONTRACTOR SHALL BE RESPONSIBLE FOR SLOPE EROSION UNTIL VEGETATION IS FIRMLY ESTABLISHED. 3. CONTRACTOR SHALL INFORM THE ENGINEER AND OBTAIN APPROVAL FROM THE ENGINEER
- OF ANY PROPOSED CHANGES IN PLAN PRIOR TO CONSTRUCTION OF THAT CHANGE. CONTRACTOR SHALL KEEP RECORD OF DEVIATIONS AND FORWARD TO THE ENGINEER. 4. CONTRACTOR WILL HAVE A WATER TRUCK AVAILABLE ON SITE AT ALL TIMES. CONTRACTOR
- WILL WATER SURFACES OFTEN ENOUGH TO ABATE DUST AS APPROVED BY THE ENGINEER. WATERING WILL INCLUDE WEEKENDS AND HOLIDAYS.
- 5. THE CONTRACTOR WILL CONSTRUCT A CONSTRUCTION ENTRANCE AS SHOWN IN THE CONSTRUCTION ENTRANCE DETAIL ON THIS SHEET AT EACH ENTRANCE FROM A STAGING
- OR WORK AREA ONTO A PUBLIC ROAD OR NON-STAGING OR NON-WORKING AREA. 6. ALL DISTURBED AREAS SHALL BE HYDROSEEDED. GRASS SEEDING SHALL BE BROADCAST
- IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. 7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTATION OF THE SEDIMENTATION

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTATION OF THE SEDIMENTATION AND EROSION CONTROL MEASURES AS SHOWN.
 THE CONSTRUCTED EROSION CONTROL AND SEDIMENTATION PLAN SHALL BE APPROVED BY THE ENGINEER PRIOR TO PERFORMING ANY SITE GRADING OR CLEARING.
 MAINTENANCE AND OPERATION OF THE EROSION CONTROL AND SEDIMENTATION SYSTEM SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTATION OF THE SEDIMENTATION AND EROSION CONTROL MEASURES.
 ANY VEGETATION NOT IN THE CONSTRUCTION AREA SHALL BE LEFT UNDISTURBED.
 ALL CLEARING LIMITS SHALL BE VISIBLY MARKED PRIOR TO CLEARING.
 ALL STORM DRAIN FACILITIES WITHIN THE PROJECT BOUNDARY, OR WHICH ARE IMPACTED BY THE PROJECT. ARE TO BE CLEARED OF SEDIMENT AND DEBRIS PRIOR TO FINAL ACCEPTANCE OF THE PROJECT.
 THIS PLAN REPRESENTS THE MINIMUM REQUIREMENTS FOR THIS PROJECT. ADDITIONAL EROSION
- THIS PLAN REPRESENTS THE MINIMUM REQUIREMENTS FOR THIS PROJECT. ADDITIONAL EROSION CONTROL MAY BE REQUIRED BY THE ENGINEER AS ARE FOUND NECESSARY.
- 14. THE TEMPORARY EROSION CONTROL SYSTEMS SHALL BE INSTALLED PRIOR TO ALL OTHER SITE CONSTRUCTION.

LEGEND

<u>SYMBOL</u>

WASHINGTON STATE DEPT. OF ECOLOGY BEST MANAGEMENT PRACTICES (BMP) REF .: STORMWATER MANAGEMENT MANUAL FOR WESTERN WASHINGTON, 2005

BMP E2.10 STABILIZED CONSTRUCTION

ENTRANCE AND TIRE WASH SEE DETAIL THIS SHEET

BMP E3.10 FILTER FENCE - SEE DETAIL THIS SHEET

BMP E3.30 INLET PROTECTION – PLACE SEDIMENT FILTER AROUND OR OVER CATCH BASINS

| DESIGNED BY LP DRAWN BY LMC CHECKED BY DREAWN BY LMC CHECKED BY DRAWN BY CHECKED BY | -3687 4-0407 |
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STABILIZED CONSTRUCTION ENTRANCE NTS

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JOB# / DWG DATE MAIN STREET 08018_SP1 7-21-10 08018 STREET IMPROVEMENTS SCALE SHEET ∺n∕a v:n∕a 25 EROSION CONTROL DETAILS

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END OF THE WORK DAY

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| 2"ø PVC PIPE | 2"¢ PVC PIPE PROVIDE 2% DOWNWARD SL TO FACE OF CURB |
|----------------------------------|-----------------------------------------------------------|
| ROOF DRAIN SECTION A-A NTS | ROOF DRAIN SECTION VIEW NTS |
| | |

✓ PROPOSED CURB & GUTTER

Δ

PROPOSED SIDEWALK

NTS

PROPOSED SIDEWALK -

CURB AND GUTTER DETAILS NTS

NOTES: CONTRACTION JOINTS OF ONE OF THE TYPES SHOWN ABOVE TO BE PLACED 10' C/C. JOINTS COMPLETELY SEVER THE STRUCTURE TO THE POINTS SHOWN. JOINTS MAY BE MADE BY INSERTING MIN. 3/16" BITUMINOUS FILLER DUMMY JOINTS. JOINTS SHALL BE CLEANED AND EDGED 3/4" EXPANSION JOINTS TO BE PLACED AT DRIVEWAY SECTIONS, CURB RETURNS, CURB RAMPS AND COLD JOINTS OR A MAX. OF 80' C/C. EXPANSION JOINTS SHALL PROTRUDE 1" BELOW THE BOTTOM OF THE GUTTER. CURB DRAINS SHALL BE CONSTRUCTED OF 2" PVC PIPE OR OTHER MATERIAL SUBJECT TO APPROVAL OF THE ENGINEER, CUT TO LENGTH TO PASS FROM THE BACK OF CURB THROUGH THE CURB TO THE FACE OF THE CURB AT THE GUTTER LINE. SPACING WILL BE MAXIMUM OF 50 FEET, CENTER TO CENTER, AND/OR EACH SIDE OF THE DRIVEWAYS AND AT SUCH LOCATIONS AS DESIGNATED BY THE ENGINEER.

v:n/a

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29

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| IAIN STREET | 08018 | DET | 7-21-10 |
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| DETAILS | scale | | Sheet |
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PROJECT SIGNS (2 EACH)

LOCATION AS APPROVED BY ENGINEER

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| | \$XXXXX | |
| | \$XXXXX | |
| DS | \$XXXXX | |
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------ CITY OF FERNDALE MAIN STREET PHASE 2a PROJECT

NTS RAISED PAVEMENT MARKER SUBSTITUTION PER CITY OF FERNDALE

 \pm \Box \circ \circ \circ \circ \circ \Box \circ \circ \circ \circ \circ \Box

RAISED PAVEMENT MARKER SUBSTITUTION PER CITY OF FERNDALE

-

SKIP CENTER STRIPE DETAIL

| 3'|(TYPP)

TYPE 1Y RPM (TYP)----

DOUBLE YELLOW STRIPE DETAIL

8888888888888888

TYPE 1W RPM (TYP)

RAISED PAVEMENT MARKER SUBSTITUTION

PER CITY OF FERNDALE

GORE STRIPE DETAIL

- TYPE 2W RPM (TYP)

└─ TYPE 2YY RPM (TYP)

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NTS

15" AND SMALLER SEWER INSTALLATION

| | | MEMBER | | | | | | | | | | | | | | | | | |
|--------|--------------------------|--------------------------------|------------------|--------------------------------|------------------|--------------------------------|--------------------------|--------------------------------|------------------|--------------------------------|-------------------------|--------------------------------|--------------------------|--------------------------------|------------------|--------------------------------|--------------------------|--------------------------------|----------------|
| | BRACE RAIL & TOP RAIL | | | | | | LINE & BRACE POST | | | | END, CORNER & PULL POST | | | GATE POST | | ALL | | | |
| ITPE | RO | UND | H-COLU | JMN | ROLL FOR | MED | ROL | IND | H–CC | NUMN | ROLL FO | RMED | RO | UND | ROLL FORM | 1ED | RO | UND | POSTS |
| | I.D. PIPE (INCHES) | WEIGHT PER FOOT (POUNDS) | SIZE (INCHES) | WEIGHT PER FOOT (POUNDS) | SIZE (INCHES) | WEIGHT PER FOOT (POUNDS) | I.D. PIPE (INCHES) | WEIGHT PER FOOT (POUNDS) | SIZE (INCHES) | WEIGHT PER FOOT (POUNDS) | SIZE (INCHES) | WEIGHT PER FOOT (POUNDS) | I.D. PIPE (INCHES) | WEIGHT PER FOOT (POUNDS) | SIZE (INCHES) | WEIGHT PER FOOT (POUNDS) | I.D. PIPE (INCHES) | WEIGHT PER FOOT (POUNDS) | LENGTH |
| 1(MOD) | 1 1/4 | 2.27 | 1 1/4 x 1 5/8 | 1.35 | 1 5/8 x 1 1/4 | 1.35 | 2 | 3.65 | 2 1/4 | 4.0 | 1 5/8 x 1 7/8 | 2.34 | 2 1/2 | 5.79 | 3 1/2 x 3 1/2 | 5.14 | 3 1/2 | 9.1 | 6' - 6" |

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MAILBOX POST DETAIL

_ 8" PVC SLEEVE

- SIDEWALK

GROUT

∖ SLEEVE

OPENING IN

– GRAVEL

- WASHED ROCK

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| 7 | | | | CITY OF FERNDALE PO BOX 936 FERNDALE, WA 98248 | MAIN STREET TYPICAL SECTIONS | JOB# / DWG 08018 SCALE | DET | DATE 7-21-10 SHEET 36 |
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| DESIGNED BY LP DRAWN BY MLK CHECKED BY | REICHHARDT & EBE <u>ENGINEERING, INC.</u> PO Box 978 423 Front St., Ste 201 Ph (360) 354–3687 Lynden, Washington 98264 Fax (360) 354–0407 |
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| CTION SIGN ZATION DEVICES (DRUMS) LOCATION EA /E VEHICLE W/TRUCK IMPACT ATTENUATOR | NOTES: 1. ALL UNITS IN FEET UNLESS OTHERWISE SPECIFIED. 2. USE A MINIMUM OF SIX (6) CHANNELIZATION DEVICES IN A TAPER, SEE MUTCD CHARTS ON THIS SHEET. 3. TRAFFIC CONTROL SIMILAR FOR WORKZONES LOCATED AT THE OTHER CORNERS OF THE INTERSECTION. 4. PROTECTIVE VEHICLE REQUIRED FOR STATIONARY WORK ZONES. PROTECTIVE VEHICLE IS OPTIONAL FOR MOBILE WORK ZONES. 5. "MOTORCYCLE USE EXTREME CAUTION" SIGN (W21–1701) SHALL BE INSTALLED THROUGHOUT THE WORKZONE AND AFTER EACH SIGNIFICANT INTERSECTION WHEN THE FOLLOWING ROADWAY CONDITIONS EXISTS DURING CONSTRUCTION: GROOVED PAVEMENT (W8–2001) ABRUPT LANE EDGE (W21–801) LOOSE GRAVEL (W8–7) STEEL PLATES ON ROADWAY |
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| UCTION SIGN LIZATION DEVICES (DRUMS) & LOCATION REA TIVE VEHICLE W/TRUCK D IMPACT ATTENUATOR | ALL UNITS IN FEET UNLESS OTHERWISE SPECIFIED. USE A MINIMUM OF SIX (6) CHANNELIZATION DEVICES IN A TAPER, SEE MUTCD CHARTS ON THIS SHEET. TRAFFIC CONTROL SIMILAR FOR WORKZONES LOCATED AT THE OTHER CORNERS OF THE INTERSECTION. PROTECTIVE VEHICLE REQUIRED FOR STATIONARY WORK ZONES. PROTECTIVE VEHICLE IS OPTIONAL FOR MOBILE WORK ZONES. "MOTORCYCLE USE EXTREME CAUTION" SIGN (W21-1701) SHALL BE INSTALLED THROUGHOUT THE WORKZONE AND AFTER EACH SIGNIFICANT INTERSECTION WHEN THE FOLLOWING ROADWAY CONDITIONS EXISTS DURING CONSTRUCTION: GROOVED PAVEMENT (W8-2001) ABRUPT LANE EDGE (W21-801) LOOSE GRAVEL (W8-7) STEEL PLATES ON ROADWAY |
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COMMON UTILITY TRENCH APPROX STA 58+50 TO 59+00, RT

COMMON UTILITY TRENCH CROSSING APPROX STA 49+60 CROSSING APPROX STA 55+64 (LENGTH APPROX 75 LF)

COMMON INTOLIGHT UTILITY TRENCH APPROX STA 49+65 TO 51+45, LT APPROX STA 52+50 TO 52+75, LT APPROX STA 54+25 TO 56+00, LT APPROX STA 57+44 TO 57+83, LT

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